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A COMPARISON OF U.S. AND SOVIET STRATEGIC DEFENSIVE DOCTRINE

by

Tricia Ann Vislay

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This thesis examines the strategic defensive doctrines of both the Soviet Union and the United States, and further explores the concrete manifestations of the disparities in those doctrines. The evolution of the defensive components of national strategies is traced from the end of World War II to the present, and specific defensive systems are described. The focus is on the impact of strategy on deployment of antiballistic missile systems, antiaircraft defenses, and civil defense programs. A comparison of current strategic defensive deployments highlights the differences in the doctrines adopted by the two nations. While the Soviet Union has deployed substantial defensive systems, the United States has chosen to forego all but minimal antiaircraft defenses. This basic difference in strategic thought may be, in itself, destabilizing.

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A Comparison of U.S. and Soviet Strategic Defensive Doctrine

by

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Lieutenant, United States Navy
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Submitted in partial fulfillment of the
requirement for the degree of

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ABSTRACT

This thesis examines the strategic defensive doctrines of both the Soviet Union and the United States, and further explores the concrete manifestations of the disparities in those doctrines. The evolution of the defensive components of national strategies is traced from the end of World War II to the present, and specific defensive systems are described. The focus is on the impact of strategy on deployment of antiballistic missile systems, antiaircraft defenses, and civil defense programs. A comparison of current strategic defensive deployments highlights the differences in the doctrines adopted by the two nations. While the Soviet Union has deployed substantial defensive systems, the United States has chosen to forego all but minimal antiaircraft defenses. This basic difference in strategic thought may be, in itself, destabilizing.

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I. INTRODUCTION

A. BACKGROUND

The combined strategic arsenals of the Soviet Union and the United States total over 20,000 nuclear warheads, deliverable by means of intercontinental ballistic missiles, sea-launched ballistic missiles, and bombers.[1] These arsenals, however, as an example of offensive power, give an incomplete picture of the superpower correlation. To complement its offensive capabilities, the Soviet Union has in place ballistic missile defenses, antiaircraft defenses, and an extensive civil defense program. The United States, on the other hand, has, except for a half-dozen squadrons of fighter-interceptors dedicated to air defense, almost completely foregone strategic defense as a component of its deterrence and warfighting strategies.

What accounts for this difference? While both nations might be characterized as "offense-heavy," why has the Soviet Union alone dedicated such a large percentage of its defense expenditures to strategic defenses? Why does the United States prefer to rely on its offensive forces to the near-exclusion of defense? What effect do these differences have

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[1] The Military Balance 1988-1989 (London: The International Institute for Strategic Studies, 1988), p. 230.

on each nation's ability and willingness to fight and to deter the other? These are the questions this thesis will attempt to answer.

B. PURPOSE

In this thesis, the respective attitudes of the Soviet Union and the United States toward strategic defense as a component of strategic doctrine will be explored through examination of military doctrine and defensive capabilities. In particular, antiballistic missile defenses, antiaircraft defenses, and civil defense will be assessed - with the realization that these systems do not, of course, exist in a vacuum. They are, rather, components of a much larger paradigm that includes elements ranging from each nation's national interests and goals to the characteristics of their particular offensive weapons, and how those weapons interact with defensive systems. The paradigm includes as well other classes warfare short of "global thermonuclear war," other types of defensive efforts, such as antisubmarine warfare and anticruise missile defense, and the early warning and surveillance systems associated with both offensive and defensive efforts.

C. SCOPE

This thesis is restricted to analysis of the three types of strategic defenses specified above, primarily because they have in common one particular characteristic: these three,

if deterrence should fail, are meant to counter nuclear weapons which have been launched toward an adversary's homeland, and then abate or eliminate the effects of those weapons. These three types of defense also provide the best open-source opportunity for comparison of U.S. and Soviet doctrines and deployments. In particular, what these types of defenses defend against, how they defend, and what they defend can be fairly well discerned. Measures of effectiveness are another matter, if one is to believe the intense current debate over the Strategic Defense Initiative in the U.S. But measuring effectiveness is peripheral to the purpose of this thesis, whose focus is instead doctrinal differences and the physical manifestations of those differences. The merit of this thesis is not the technological evaluation of strategic defenses, but the impact that national strategies of the Soviet Union and United States have had on their acquisition and maintenance.

In an attempt to answer the questions posed earlier, this thesis will first offer a definition of the concept of defense and describe the uses of defense as a deterrent, a function ("what it defends") and a method ("how it defends"). Next, the evolution of both U.S. and Soviet strategic defensive doctrine, and the resulting defensive programs and capabilities will be examined. A simple net assessment will follow, in order to compare the defensive efforts undertaken

by the two superpowers. Finally, the conclusions and findings of this thesis will be presented in a summary chapter.

II. DEFINING STRATEGIC DEFENSE

A. OFFENSE AND DEFENSE COMPARED

"What is the concept of defense?" von Clausewitz asked. "The parrying of a blow. What is its characteristic feature? Awaiting the blow. It is this feature that turns any action into a defensive one; it is the only test by which defense can be distinguished from attack in war....defense in war can only be relative...."[2]

As Clausewitz suggests, defense and offense are sometimes difficult to distinguish from each other. Sometimes described as opposites, or at a minimum placed at opposing ends of a spectrum, offense and defense in reality overlap, interconnect, and exist at various levels, from individual weapons and military capabilities to military strategies and political goals. "The concept of the offensive/defensive balance of military technology," says one writer, "has been defined in the literature in terms of the defeat of enemy armed forces, the ease of territorial conquest, protection of population, tactical mobility, the characteristics of

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[2] Carl von Clausewitz, On War, edited and translated by Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1976), p. 357.

armaments, the relative resources expended on the offense and the defense, and the incentive to strike first."[3]

Offense and defense may, in fact, coexist and be effected by the same instruments. At different points in history, one use has usually predominated over the other in what can be described as a permanent dialectic, wherein "different mixes of offensive and defensive weapons are selected for synergistic effect as technologies evolve, doctrines alter, and military missions shift."[4] A decision to concentrate on offense or defense may be the result of economic or political circumstances, or extant technology levels.[5] The important point is that the offense/defense characteristic resides far more in the purpose for which a weapon is intended, or the way it is finally used, than in the weapon itself.

As long as this last point is kept in mind, it may be helpful to discuss the impact of technology on offense/defense predominance today. One Western expert, in describing the "pendulum of advantage," notes that strategic offensive technologies are currently relatively mature, while defensive technologies are immature. This means, he says, "that for the

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[3] Jack S. Levy, "The Offensive/Defensive Balance of Military Technology: A Theoretical and Historical Analysis," International Studies Quarterly, (1984) 28, p. 234.

[4] Colin S. Gray, "The Transition from Offense to Defense," The Washington Quarterly, Summer, 1986, p. 65.

[5] Michael J. Deane and Ilana Kass, "Why Strategic Defense But Not Defensive Strategy?" Signal, November, 1987, p. 108.

next several decades at least the advantage in growth in performance potential ought to plainly lie with the defence."[6] Indeed, some experts foresee the possibility that technological developments will undermine current strategies, particularly when these strategies rely on the threat of punitive retaliatory action. For example, research in non-acoustic detection of submerged submarines, which might carry warheads reserved for second strikes, continues, and missiles and warheads, which might destroy strategic nuclear reserves, are becoming increasingly accurate. Any strategy based on the ability to inflict destruction on an enemy through the use of second-strike offensive weapons could be thwarted if the survivability of those weapons is not ensured. And if deterrence based on a retaliatory strategy fails, "the result is catastrophic. In Pentagon language, the doctrine does not degrade gracefully."[7]

While technology may have an impact on the strategic choices a nation makes at any given time, it is not until one attempts description of military strategies and political goals that the distinction between offense and defense is made clearer. Simply stated, an offensive strategy involves using military forces to attack, destroy, seize and hold in order

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[6] Colin S. Gray, "Strategic Defenses," Survival, March/April, 1985, p. 54.

[7] Robert Jastrow, "The Technical Feasibility of Ballistic Missile Defense," Journal of International Affairs, Summer, 1985, Vol. 39, No. 1, p. 45.

to change one or more elements of the political, territorial, or military status quo. A defensive strategy condones none of these things, but aspires mainly to prevent the enemy from doing them.[8] In order to prevent an enemy from carrying out his objectives, a nation cannot sit back and hope that nothing happens. Defensive strategies require expenditures of time, resources and effort if they are to be effective.

B. THE PURPOSE OF STRATEGIC DEFENSE

"The aggressor is always peace-loving (as Bonaparte always claimed to be); he would prefer to take over our country unopposed. To prevent his doing so," Clausewitz recommended, "one must be willing make war and be prepared for it."[9] Strategic defense is therefore a preventive measure aimed at "the preservation by military means of those things a society values most."[10]

Strategic defense operates in two primary ways. First, it can serve as a means to deter an enemy from attacking. As some offensive strategies can deter through threat of punishment, defensive strategies are a form of deterrence

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[8] Samuel P. Huntington, "U.S. Defense Strategy: The Strategic Innovations of the Reagan Years," in Joseph Kruzel, ed., American Defense Annual 1987-1988 (Lexington, MA: D.C. Heath/Lexington Books, 1987), p. 37.

[9] Clausewitz, p. 370.

[10] Lawrence Freedman, Strategic Defense in the Nuclear Age (London: International Institute for Strategic Studies, 1987), p. 9.

based on denial. "A defense which frightens the attacker away...is a major military asset," because it has complicated the attacker's job, denied him a free ride,[11] and dissuaded him from attacking. Contrary to popular assumption, therefore, deterrence and defense are not mutually exclusive. Rather, defense is a method of deterrence, deterrence through denial; the problem is that this method of deterrence is frequently ignored.

Some strategists view strategies based on the threat of mutual assured destruction as the "inevitable consequence of the superpowers having the nuclear arsenals they have." It is therefore not subject to political volition;[12] it will exist as long as the arsenals required to effect it are preserved. Firmly embedded in human consciousness, "[d]eterrence in the nuclear age has come to be understood in terms of mutual threats of nuclear devastation varying only in kinds of targets, i.e., countermilitary, counter-industrial, counter-city, or all of these."[13] Perhaps because this type of

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[11] Charles M. Herzfeld, "Missile Defense: Can It Work?" in Johan J. Holst and William Schneider, Jr., eds, Why ABM? Policy Issues in the Missile Defense Controversy (New York: Pergamon Press, 1969), pp. 16-17.

[12] George Rathjens and Jack Ruina, "BMD and Strategic Instability," in P. Edward Haley and Jack Merrit, eds., Strategic Defense Initiative: Folly or Future? (Boulder, CO: Westview Press, 1986), p. 55.

[13] Keith B. Payne and Colin S. Gray, "Nuclear Policy and the Defensive Transition," Foreign Affairs, Vol. 62, No. 4, Spring, 1984, p. 827.

deterrence through punishment has been emphasized in the West over forty years, it has become "familiar." The assumed "predictability" it imparts to extant and potential conflict between the Soviet Union and the U.S. has resulted in its identification as the only legitimate method of deterrence, to the exclusion of defensive denial strategies.[14]

One of the problems with a deterrent strategy which excludes a defensive element is that, since it is not "likely to work forever," the consequences of its failure would be intolerable for civilization.[15] Protection for the American people and production base presently is "contingent on successful counterforce second strikes, escalation control, and a quick cease-fire, none of which holds much promise....this nation is naked to reciprocal assaults."[16] Although the situation in the Soviet Union is perhaps somewhat more hopeful, if effective strategic defenses were incorporated in the "balance of nuclear terror," both the chances and the threat of war could be reduced.[17] In the absence of extensive, verifiable, enforced arms reduction

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[14] P. Edward Haley and Jack Merrit, eds., Strategic Defense Initiative: Folly or Future? (Boulder, CO: Westview Press, 1986), pp. 1-2.

[15] Payne and Gray, p. 820.

[16] John M. Collins, The U.S.-Soviet Military Balance 1980-1985 (Washington, DC: Pergamon-Brassey's, 1985), p. 60.

[17] Edward L. Rowny, "SDI: Enhancing Security and Stability," Department of State Bulletin, May, 1988, p. 26.

agreements, and a substantially altered political climate, there are few other ways to enhance deterrence.

The second way in which strategic defense operates comes into effect if deterrence should fail. Not only can defenses protect valuable assets such as population, retaliatory forces or economic resources, they also exact a price from the offense of the attacker. By forcing a buildup of the offense, either qualitatively or quantitatively, defenses have diverted an attacker's resources prior to an attack; once the attack has commenced, defenses "absorb" part of the offense.[18] Lieutenant General James Abrahamson, former director of the Strategic Defense Initiative Organization, states that an effective defense must "be able to destroy a sufficient portion of an aggressor's attacking forces to deny him confidence in the outcome of an attack or deny an aggressor the ability to destroy a militarily significant portion of the target base he wishes to attack."[19]

History has demonstrated that defense may eventually be overcome, through technological advances or tactical or strategic innovation, if an attacker is willing to "pay the compound price in time and in assets to be expended."[20] This

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[18] Herzfeld, in Holst and Schneider, p. 16-17.

[19] James Abrahamson, "The SDI: Program and Rationale" (excerpts from a statement to Congress, 9 May 1984), Survival, March/April, 1985, p. 82.

[20] Gray, "The Transition from Offense to Defense," p. 60.

is part of the dialectic explained above. Whatever resources the attacker chooses to devote to thwarting them, defenses have still cost him, in terms of increased masses of offensive forces, time devoted to operations or research efforts, numbers of personnel, manufacturing hours and so on devoted to the effort. If the cost is judged too high by the attacker, he will again be deterred.

The relative costs involved in defending and attacking are a source of much disagreement. Cost estimations do not take into account the value of that which is to be defended,[21] but are measures of how many offensive dollars it would take to offset a given number of defensive dollars, or vice versa. For instance, a British Air Ministry study in 1944 determined that for every dollar the Germans spent on their V-1s, the British spent four dollars to neutralize these flying bombs with antiaircraft guns, barrage balloons, and fighter aircraft.[22] How much human lives, the preservation of nature, and manmade phenomena, whether art or science, are worth, seldom enters into the calculations. At most, the value of enhancing the survivability of retaliatory forces is considered.

The cost of expanding the defense to deal with a given increase in the size and cost of the offense is a measure of

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[21] Freedman, p. 13.

[22] David Ritchie, Spacewar (New York: Athenum, 1982), p. 24.

the leverage of the defense. The more specific an attacker's objectives and the higher the confidence of success the attacker requires, the greater the leverage exacted by the defense. "If the defense has sufficiently high...leverage, it can essentially preclude attacks."[23] And, "once the defender has gained an...advantage, defense as such has done its work," according to Clausewitz.[24] These relative costs of offense and defense are invariably measured in terms of dollars expended for one or the other, and formatted as a ratio.

How effective must defenses be to "do their work"? This is another point of contention. It is the opinion of former Secretary of Defense Harold Brown that "a strategy of deterrence based on defense would require that the defensive systems work to near perfection, and that we have a very high level of confidence that they will do so."[25] Many others, however, believe that deterrence is enhanced by even partially effective strategic defensive systems, because of the uncertainty they inject into an attacker's plans.[26] An attacker cannot be certain which, if any, of his weapons will

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[23] Fred S. Hoffman, "Ballistic Missile Defense and U.S. National Security," in Haley and Merrit, p. 32.

[24] Clausewitz, p. 370.

[25] Harold Brown, "The Strategic Defense Initiative: Defensive Systems and the Strategic Debate," Survival, March/April, 1985, p. 56.

[26] Rowny, p. 24.

be able to penetrate defenses; this uncertainty forces him either to expend a tremendous amount of resources to ensure destruction of his target or to forego--or at least delay--his attack. By denying the attacker confidence in his ability to achieve his objectives, defenses "reinforce or help maintain deterrence."[27]

There are very few, if any, advocates of purely defensive strategies. "One must assume that both the Soviet Union and the U.S. prefer a condition wherein both their offensive and their defensive capabilities are effective, to a condition wherein only their defensive weapons can perform as intended."[28] The Soviet Union places approximately as much weight on its defensive forces as it does its offensive capabilities; U.S. strategists are suggesting that the U.S. base its posture on a "mix of offensive and defensive systems."[29] A combination of offensive and defensive strategy and capability may be the most effective deterrent in an age of nuclear parity.[30]

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[27] Hoffman, in Haley and Merrit, p. 30.

[28] Payne and Gray, p. 842.

[29] Discriminate Deterrence (Report of the Commission on Integrated Long-Term Strategy), January, 1988, p. 2.

[30] Huntington, in Kruzel, p. 42.

C. HOW DEFENSES WORK

Defenses work in one of two ways. First, they can be passive. Passive defenses are characterized by their lack of active contact with the enemy. They might consist of something as simple as a geographic location which provides a nation with natural defenses such as mountains or an inhospitable coastline.[31] Passive defenses can also protect potential targets through warning, mobility, concealment, sheltering, dispersal, hardening, and proliferation. When designed to protect the general population, passive defenses are called "civil defense," but passive measure can be used to protect military assets as well. Hardening, for instance, might involve making a missile silo resistant to the direct effects of nuclear weapons. Warning enables aircraft to escape vulnerable bases; ground forces can disperse from barracks or other installations.[32] Dispersal, or evacuation, and sheltering are the most common forms of civil defense.

In contrast, active defenses involve interception of an attacker or his offensive weapons[33] in order to destroy or render ineffective those weapons. Interception is effected either in space or in the atmosphere by means of aircraft,

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[31] Freedman, p. 8.

[32] Leon Sloss, "The Strategist's Perspective," in Ashton B. Carter and David Schwartz, Ballistic Missile Defense (Washington, DC: The Brookings Institution, 1984), p. 36.

[33] Sloss, in Carter and Schwartz, p. 36.

missiles, or other more exotic defensive weapons.[34] There are currently two basic types of active defense, antiaircraft defense and antiballistic missile defense. Antiaircraft defenses, or simply "air defenses," are designed to intercept bombers or other airbreathers, such as cruise missiles. Antiballistic missile defenses are intended to intercept intercontinental ballistic missiles and sea-launched ballistic missiles.[35]

D. DEFENSE AS A FUNCTION

Active defenses can also be divided into categories according to what they are specifically intended to defend. Sometimes point defense, or defense of weapons, and area defense, or defense of cities, are terms used to describe these defensive functions. There is, however, no clear dividing line between these artificially imposed categories. For instance, point defense is defined as the use of defensive weapons "to defend a limited geographic area, such as a missile silo, against attacking missiles."[36] An area defense might be designed to protect a city or even an entire country.[37] But how limited must the area defended be in order

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[34] Zbignew Brzezinski, ed., Promise or Peril (Washington, DC: Ethics and Public Policy Center, 1986), p. 457.

[35] Sloss, in Carter and Schwartz, p. 36.

[36] Brzezinski, Promise or Peril, p. 463.

[37] Stephen Weiner, "Systems and Technology," in Carter and Schwartz, p. 75.

for defenses to be characterized as "point defense"? As the range of interceptors increases and thereby fuzzes the distinction between point and area capabilities, these definitions become increasingly inconsequential. There may be great overlap between the two, especially when cities and weapons are in close proximity.

Again, intentions may be the key to distinguishing these types of defense. If antiballistic missile defense is intended to protect primarily missile silos, it could be described as point defense, even though city defense might be a collateral effect of such defense. If an area defense is deployed to defend mainly cities, it may coincidentally prevent offensive weapons from destroying missile silos.

Active defenses are also described in terms of the point in an offensive weapon's trajectory in which it is intercepted. These distinctions are most commonly applied to antiballistic missile defensive systems, which might intercept a missile during the boost, post-boost, midcourse, and terminal phases of its flight.

The most useful distinctions may be those that describe function as what defense defends against, rather than what it defends. To this end, for purposes of this thesis, the terms antiballistic missile defense and antiaircraft will be used as defined above, without particular regard for what these systems are defending except where necessary to clarify an essential point.

III. THE EVOLUTION OF U.S. DEFENSIVE DOCTRINE

A. BACKGROUND

About ten years ago, on NATO's thirtieth anniversary, Henry Kissinger commented on the unique position the U.S. had taken on strategic defenses. "It cannot have been often in history," he said, "that it was considered an advantageous military doctrine to make your own country deliberately vulnerable."[38] Yet, this is exactly the course the U.S. has pursued through much of the post-World War II era, and the strategic policy it continues to adhere to today. Air Force Chief of Staff General Larry D. Welch comments that "This tremendous opposition to introducing a defensive element to the U.S. deterrent strategy has to be one of the most mysterious pieces of political chemistry we've seen."[39]

Where does this opposition originate? It is certainly not a popular idea with the American public, over half of whom (64%) are under the impression that the U.S. has already implemented strategic defensive systems. In fact, recent polls demonstrate that fully 90% of Americans, an increase of

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[38] Henry A. Kissinger, "NATO: The Next Thirty Years," Survival, November/December, 1979, p. 265.

[39] "Curious Chemistry," The Wall Street Journal, 30 September 1988, p. 22.

15% over figures from merely four years earlier,[40] "want the U.S. Government to protect America against Soviet missiles."[41] Harold Brown, Secretary of Defense under President Carter, notes that "presidents and all Americans are fundamentally dissatisfied with the fact that U.S. nuclear strategy depends on rational decisions by the Soviet Union, with the possibility that this nuclear strategy might fail, and the consequences that would follow."[42]

The defensive element has not always been absent from U.S. strategy. In fact, one of the earliest American warfighting doctrines relied almost exclusively on defensive measures. During the American Revolution, George Washington adopted a strategic defensive strategy; because his armies were so weak, Washington was unable to pursue an offensive strategy.[43] By maintaining both a tactical and a strategic defensive, he hoped to resist successfully whatever forces the British might mobilize against his relatively poorly equipped and trained troops.[44] Although fairly well isolated by vast oceans, the

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[40] William R. Van Cleave, Fortress USSR (Stanford, CA: Hoover Institution Press, 1986), p. 40.

[41] William F. Buckley, "What's Going On?" National Review, 30 September 1988, p. 64.

[42] Harold Brown, "The Strategic Defense Initiative: Defensive Systems and the Strategic Debate," Survival, March/April, 1985, p. 56.

[43] Russell F. Weigley, The American Way of War (Bloomington, IN: Indiana University Press, 1973), p. 5.

[44] Weigley, p. 9.

U.S. maintained coastal artillery positions until well into this century, in spite of the fact that few adversaries were capable of projecting aggression against American shores. However, in what can only be described as a peculiarly inverse relationship, it seems that as the ability of opponents to threaten directly the North American continent has increased, American defensive capabilities have decreased.

B. U.S. DEFENSIVE STRATEGY THROUGH WORLD WAR II

Through the first half of the twentieth century, when many countries found their national territories subject to the terrible destruction of two world wars, the U.S. faced few direct threats to its exercise of sovereignty over American soil and airspace. During World War II, attacks on the continental U.S. consisted of "two landings of saboteurs by U-boat, a single shelling of a West Coast oil refinery by a Japanese submarine, and a pathetic strategic bombing by balloon (wiping out a Sunday-school picnic in Oregon)."[45] The Germans had plans to bombard New York, using pilots who would bail out and be picked up by submarine, but the war was over before these attacks could be carried out.[46]

The U.S., however, was prepared to defend itself in the event immediate threats evolved. During the late 1930s, the

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[45] B. Bruce-Biggs, The Shield of Faith (New York: Simon and Schuster, Inc., 1988), p. 30.

[46] Bruce-Biggs, p. 41.

Joint Army and Navy Board had revised Plan Orange, originally developed immediately following the first world war, to include a defensive effort in the Pacific. This plan incorporated a triangular "position of readiness" that ranged from Alaska to Hawaii to Panama. In 1939, "Rainbow Plans" which assumed a threat from Germany were formulated; they contained provisions for the defense of the Western Hemisphere.[47]

Once the U.S. entered World War II, a strategic defensive effort was quickly implemented. Coastal radars, interceptor squadrons, and antiaircraft guns were supplemented with hundreds of thousands of civilian ground observers who had been recruited to identify incoming aircraft.[48] The threats which these measures were intended to counter never materialized, and, with minor exceptions, the U.S. defensive effort has since been permitted to atrophy.

C. THE LATE 1940S

In the years immediately following the war, U.S. defense deployments declined, at least in part as a result of the lack of a significant strategic threat. In addition, demobilization drastically reduced the numbers of personnel in the U.S.'s armed forces. While the U.S. possessed only a

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[47] James Chace and Caleb Carr, America Invulnerable (New York: Summit Books, 1988), pp. 213-214.

[48] Bruce-Biggs, pp. 28-29.

limited number of nuclear weapons and few delivery vehicles at this time, no other nation had yet developed a similar capability to project so much power over such great distances. The U.S.'s geographic isolation continued to serve as an effective means of passive defense during this period of U.S. nuclear superiority. As Richard Pipes has noted, "America has tended to rely on its insularity to protect it from aggressors, and on its unique industrial capacity to help crush its enemies once war was underway."[49]

During the immediate postwar period, the Soviet Union was not viewed as an imminent nuclear threat. Not only did the Soviets lack the technology necessary to produce deliverable nuclear weapons at that time, they were also occupied with recovering from the ravages the Nazis had caused. In the U.S., few were concerned with U.S. vulnerability, and many believed that an "effective antidote" to the bomb would eventually be discovered. President Truman, in a speech to Congress on 23 October 1945, said "Every new weapon will eventually bring some counter defence to it."[50] Although Soviets and Americans had recently been allies and successfully defeated adversaries in both Europe and Asia, the U.S. had still not decided exactly what its attitude toward the Soviet Union should be. There were proposals for

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[49] Richard Pipes, "Why the Soviet Union Thinks It Can Fight and Win a Nuclear War," Commentary, July, 1977, p. 22.

[50] Lawrence Freedman, p. 30.

cooperation with the Soviets coming from some sectors, and warnings against "foolish gestures of trust" from others.[51]

Those who looked to the future did not allow themselves to slip into complacency during this period of offensive superiority. Anticipated threats were examined; a board of scientists recommended the concept of antiballistic missile defenses to the Army as early as 1946,[52] when Thumper and Wizard research projects were initiated to examine the technical feasibility of ballistic missile defense.[53] The Army's Project Thumper, under contract with General Electric, was rejected as technologically impossible; the Air Force's Wizard program was similarly discontinued in the late 1940s.[54] Since no U.S. adversary possessed intercontinental ballistic missiles, no urgent requirement to develop such a defensive capability existed at that time.

The Thumper and Wizard projects had been derived from existing air defense research efforts. The Soviet Union, decidedly making the transition from ally to opponent, was developing nuclear weapons and the long-range bombers

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[51] McGeorge Bundy, Danger and Survival (New York: Random House, 1988), p. 178.

[52] Fred Kaplan, The Wizards of Armageddon (New York: Simon and Schuster, 1983), p. 343.

[53] David N. Schwartz, "Past and Present: The Historical Legacy," in Carter and Schwartz, p. 331; and David S. Yost, Soviet Ballistic Missile Defense and the Western Alliance (Cambridge, MA: Harvard University Press, 1988), p. 316.

[54] Bruce-Biggs, p. 102.

necessary to deliver them to U.S. territory.[55] These two emerging Soviet capabilities triggered a U.S. continental air defense effort that flourished in the early and mid-1950s.[56] The Lincoln Summer Study of 1952 examined a proposal by scientists at the Massachusetts Institute of Technology and elsewhere to build a highly effective air defense system, and recommended the construction of a large and costly air defense control system to protect U.S. cities against the Soviet bomber threat. Eerily foreshadowing a similar perceived need that would arise in the 1980s, the Study's proposal would have required leakproof antiaircraft defenses. Such defenses were technologically infeasible during the late 1940s and early 1950s,[57] as they may still be in the 1990s.

The North American Air Defense Command, derived from the Air Defense Command which had been organized in 1946, was established during this period, as were two early warning radar lines across Canada. A large number of interceptor squadrons were also deployed, and antiaircraft batteries were positioned near probable targets. These capabilities were generated largely as a result of a lobbying effort conducted by a coalition of nuclear scientists, military officers,

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[55] William J. Broad, "Star Wars Traced to Eisenhower Era," New York Times, 28 October 1986, p. C3.

[56] Huntington, in Kruzel, p. 24.

[57] Henry S. Rowen, "The Evolution of Strategic Nuclear Doctrine," in Laurence Martin, Strategic Thought in the Nuclear Age (London: Heineman, 1979), p. 138.

civilian officials, and legislators in response to Soviet offensive developments.[58]

D. THE EISENHOWER ADMINISTRATION

During the Eisenhower Administration, U.S. strategy continued to emphasize superiority. Both strategy and forces were deterrence-oriented, with emphasis on the nuclear umbrella the U.S. was able to provide for its allies.[59]

Eisenhower relied on the nuclear threat of existential deterrence, which means that through their mere existence, nuclear weapons deter. The inference was that "conventional warfare had become all but unacceptable to the U.S., which had the great advantage of possessing nuclear weapons," in themselves enough to counter superior Soviet manpower or any other military assets the Soviets might boast.[60] Eisenhower argued that there was no defense against nuclear weapons, and his secretary of state, John Foster Dulles, proclaimed the doctrine of massive retaliation: the United States would "depend primarily upon a great capacity to retaliate,

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[58] Huntington, in Kruzel, p. 24.

[59] U.S. Department of Defense, Statement of Secretary of Defense Melvin R. Laird Before the Senate Armed Services Committee on the Fiscal Year 1972-1976 Defense Program and the 1972 Defense Budget (Washington, DC: U.S. Government Printing Office, 15 March 1971), p. 72.

[60] John Newhouse, War and Peace in the Nuclear Age (New York: Alfred A. Knopf, 1989), p. 91.

instantly, by means and at places of our own choosing."[61] Although Dulles later explained that he had intended massive retaliation to be just one option among many in a strategy of flexible retaliation,[62] the idea was to make war so horrifying that it became "unthinkable."

Although nuclear offensive capabilities were emphasized at the time, this was not to the exclusion of strategic defenses. Between 1953 and 1958, the U.S. made a "sincere (if low-budget) effort to defend the country," particularly under the auspices of the Nike program.[63] Over 4,000 Nike-Ajax missiles were deployed in the continental U.S. by the Army beginning in 1953, as part of an air defense system that was eventually turned over to the National Guard.[64] The Nike interceptor, intended to help the Army fulfill the point-defense-only mission it had been given at Key West in 1947,[65] was designed to explode upon striking bombers.[66]

In 1958, the U.S. began deployment of a follow-on, the Nike-Hercules, as antiaircraft guns were being phased out for replacement with Nike-Ajax. When deployment of the Nike-Ajax

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[61] Pipes, p. 23.

[62] Freedman, The Evolution of Nuclear Strategy, p. 76.

[63] Angelo Codevilla, While Others Build (New York: The Free Press, 1988), p. 5.

[64] Bruce-Biggs, p. 67.

[65] Bruce-Biggs, p. 48.

[66] Broad, p. C3.

itself was discontinued in 1963, all air-defense batteries from that point on were fitted with the Nike-Hercules.[67] In spite of the widespread deployment of the Hercules, it had two shortcomings: its accuracy rapidly degenerated at altitudes of less than 500 feet, so that at an altitude of under 200 feet it was worthless, and it could only operate when it was able to maintain a line-of-sight on its target. In order to fill this low-altitude gap in antiaircraft defense coverage, the HAWK (for "Homing-All-the-Way-Killer") missile was developed. The HAWK, mounted on a small launcher that could be swung toward an incoming target, was never deployed for defense of the continental U.S., however.[68]

By 1956, Bell Labs had declared antiballistic missile systems technically feasible, and the Army and the Pentagon's research and development director ordered development of an ABM system which they named Nike II or Nike-Zeus.[69] Research on Nike-Zeus, fuelled by evidence that the Soviets were developing intercontinental ballistic missiles,[70] resulted in a terminal/late mid-course defensive system[71] that included "batteries of interceptor missiles and a set of huge radars

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[67] Bruce-Biggs, p. 93.

[68] Bruce-Biggs, p. 94.

[69] Kaplan, p. 343.

[70] Huntington, in Kruzel, p. 24.

[71] William Schneider, Jr., "Missile Defense Systems: Past, Present, and Future," in Holst and Schneider, p. 4.

that would track incoming enemy warheads and guide the interceptors to destroy them in their path with a nuclear explosion."[72] Nike-Zeus was intended to counter not only ballistic missiles, but cruise missiles and high-flying aircraft as well, but its range was limited to 100 miles, since that had been defined as the cut-off point for the Army's point defense role.[73]

Army and Air Force programs often overlapped during this period. The National Security Act of 1947, which had reorganized the military, mandated creation of the Air Force as a separate service, but did little to define the roles and missions of the services.[74] Both the Army and the Air Force had a substantial stake in defenses, and consequently pursued surface-to-air missile projects. The Air Force, however, "jealous that the Army had flying things to shoot down airplanes," had subsequently lobbied successfully to restrict the operating altitude of the Army's missiles.[75]

In 1962, about five years after the Soviet Union had tested its first ICBM, Nike-Zeus completed its first successful interceptions.[76] The interception problem, which

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[72] Kaplan, p. 343.

[73] Bruce-Biggs, pp. 105 and 107.

[74] Newhouse, p. 70.

[75] Codevilla, pp. 38-39.

[76] Schneider, in Holst and Schneider, p. 4.

Bell Labs had found to be the most difficult task for the system to fulfill, was eased but not solved by the one-megaton warhead the interceptor missiles carried. About one-third of the test interceptions attempted were failures;[77] the system was limited by the relatively slow speed of the interceptors (about one-quarter that of an incoming ICBM) and restrictions imposed by mechanically steered radars.[78] Nike-Zeus was judged not effective enough to be deployed.[79]

Development by the Soviet of an intercontinental ballistic missile capability had several impacts on U.S. defensive programs. First, the Eisenhower Administration cut back on defenses against bombers. Second, it upgraded the Nike program, as described above, in an attempt to counter the new threat. And, finally, it initiated Project Defender to explore exotic new antimissile technologies,[80] in a move that has been characterized as the beginning of the subsidized, pseudotechnical U.S. strategic defense debate that continues today.[81]

Project Defender was a crash program in ballistic missile defense. It included studies of non-nuclear ABMs to protect

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[77] Broad, "Star Wars Traced to Eisenhower Era," p. C3.

[78] Schneider, in Holst and Schneider, p. 4.

[79] Schneider, in Holst and Schneider, p. 5.

[80] Broad, "Star Wars Traced to Eisenhower Era," p. C3.

[81] Codevilla, p. 5.

cities; ultra-high-acceleration ABMs, like Hibex; non-nuclear space-based interceptors launched from satellites; and ABMs with multiple one-pound, heat-seeking warheads for mid-course defense. SPAD, for Space Patrol Active Defense, which would have killed enemy boosters and post-boost vehicles with a three-pound "spinning spider web" 60-100 feet in diameter and strung with tiny steel pellets, was tested.[82]

These efforts of the Eisenhower Administration provoked the first U.S. ABM debate. In the spring of 1958, a report submitted by a panel of engineers and other technicians in the Pentagon maintained that Nike-Zeus simply would not work against a dedicated enemy attack because it could be saturated too easily. The panel, called the Reentry Body Identification Group, also discovered other, even simpler ways to defeat Nike-Zeus. Disabling the system's tracking radars, which were so vulnerable that a 100,000-kiloton blast two miles distant could blind them, could render the entire system useless. Decoys, which the system was unable to distinguish from warheads, could trick the system into firing off all of its interceptors. By November, 1961, President Kennedy had heard enough about Nike-Zeus's weaknesses to decide against deployment of the system.[83]

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[82] John Bosma, "Arms Control, SDI, and the Geneva Convention," in Brzezinski, p. 358.

[83] Kaplan, pp. 343-345.

Although some of the other ABM projects initiated during this period showed great promise, especially if deployed in numbers significant enough to complicate enemy attacks,[84] only components of the systems developed at this time would ever be used in active defense of the U.S.

E. THE 1960S AND MCNAMARA

In 1961, with the Kennedy Administration in office, the emphasis of U.S. strategic thought changed. Although much attention was diverted from nuclear weapons and directed toward conventional and unconventional warfare,[85] the strategy of flexible response was during this time. As Soviet nuclear capabilities increased, this strategy was intended to give the President alternatives other than the "suicide or surrender" options massive retaliation provided. In particular, massive retaliation did not give Kennedy the ability to deter revolutionary movements or wars of liberation. The concept of flexible response revolved around matching the "potential range of challenge with a correspondingly broad range of options."[86] The U.S. intended to be able to respond anyplace, anytime, with weapons and forces appropriate to the situation.

The new administration's Secretary of Defense, Robert McNamara, originally endorsed Nike-Zeus, although on a

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[84] Huntington, in Kruzel, p. 24.

[85] Bruce-Biggs, p. 160.

[86] Newhouse, p. 163.

considerably smaller scale than the Army advocated. McNamara was willing to consider deployment of 1,200 missiles in 12 batteries to defend six cities. The Army wanted 70 batteries, a total of 7,000 missiles, to protect 27 areas in the U.S. and Canada.[87] McNamara refused to put Nike into production. As indicated above, he felt it could not be effective enough to justify its cost.[88] McNamara maintained that Nike-Zeus could never defend against a massive Soviet attack, but he was willing to accept a limited deployment. A small deployment might increase Soviet uncertainty, and help to deter an attack; it might also protect the U.S. from accidental attacks or discourage "nuclear blackmail" by smaller powers.[89]

McNamara, in fact, was taking U.S. strategic doctrine in a wholly new direction. Initially a supporter of strategic defensive efforts, he advocated measures to ensure the invulnerability of second-strike forces, and was responsible for ordering the commencement of construction of facilities at Cheyenne Mountain. During the first two years of his tenure, he supported a city-avoidance targeting policy, and tailored U.S. forces to fit this strategy.[90] McNamara hoped that this policy could protect the cities on both sides by

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[87] Kaplan, p. 345.

[88] Weigley. p. 448.

[89] Kaplan, p. 345.

[90] Newhouse, pp. 163-164; and Bruce-Biggs, p. 156.

giving an adversary the "strongest imaginable incentive to refrain from striking our own cities."[91]

McNamara subsequently set the U.S. on a course that would lead to the total devaluation of strategic defense as a component of national strategy. After 1963, overwhelming significance was again placed on the U.S. nuclear arsenal, under the guise of Assured Destruction. McNamara's thinking about nuclear warfare had changed. He anticipated the advent of circumstances that would enable both sides to deliver devastating retaliatory attacks regardless of damage-limitation measures. Escalation and mutual destruction in general nuclear war were inevitable.[92]

Originally a simple analytical tool to help assess strategic force adequacy, the concept of assured destruction became the principal criterion of this adequacy, the dominant strategic concept, and finally a philosophy of mutual deterrence stability. Analyses which compared the cost of protecting populations to the cost of destroying them, assuming that people were the object of the attack and not "collateral damage," showed the defense to be at a cost disadvantage. Although some experts contend that the costs of ballistic missile defense, expressed as a ratio of the costs of defense to cost of offsetting the missile had dropped

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[91] Bundy, p. 545.

[92] Bundy, pp. 547-548 and 566.

during the 1960s "from 20:1 to...somewhere closer to parity, where the advantage was arguable,"[93] McNamara's figures showed that it was still about three times more expensive to defend than to destroy.[94] Strategic stability was transformed from a condition into a military asset, and the "amazing theory" that vulnerability contributed to peace and invulnerability contributed to the risks of war began to unfold.[95]

Deterrent policy was predicated on the virtues of U.S. and Soviet vulnerability to nuclear attack, and deterrence stability was seen as a function of mutual vulnerability.[96] McNamara persuaded President Johnson that damage-limiting on a large scale should not be pursued.[97] Damage limitation, which McNamara applied to cities vice military forces, consisted of implementation of civil defense measures, ABMs, and city-avoidance targeting, none of which "worked" as far as McNamara was concerned. McNamara was changing his mind about the wisdom of ABMs in general, but there were pressures from the Joint Chiefs of Staff and their allies on Capitol Hill for some type of protection from enemy ballistic

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[93] Van Cleave, p. 9.

[94] Rowen, in Martin, p. 146.

[95] Kissinger, p. 265.

[96] Robert M. Soofer, "SDI and Deterrence: A Western European Perspective," Comparative Strategy, Vol. 7, No. 1, 1988, p. 18.

[97] Rowan, in Martin, p. 146.

missiles. McNamara was finding it politically impossible to kill the Nike program outright, so he attempted to stem off deployment by allocating large sums of money for research and development. Almost $500 million per year was dedicated to Nike, but none of these funds were for production of the system.

By this time, the Army had improved Nike-Zeus. Research on Nike-X, which came to include the concept of layered, area defense, had begun in 1962.[98] The new proposal incorporated phased-array radar, which could scan wider areas of the sky, and a dual missile system that included both the long-range Spartan and the short-range Sprint.

Spartan, a three-stage missile, would be launched to destroy enemy missiles at a safe distance from their targets, in order to spare the targets the effects of fallout from Spartan's nuclear warhead. A kill of the enemy missile could be effected in several ways: Spartan could knock the missile off-course, blow it up, or destroy its guidance systems with radiation from its fireball. Any incoming missiles that Spartan failed to intercept would be targeted by the smaller, faster Sprint interceptor, which would explode in their path to knock them down or incinerate them in midair. Because the resulting explosion was bound to harm nearby population

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[98] Schneider, in Holst and Schneider, pp. 5-6.

centers with adverse nuclear effects, Sprint was the "defense of last resort."[99]

Scientists pointed out this attempt at a layered defense did not remedy any of Nike-Zeus's shortcomings,[100] and the entire antimissile effort came under fire from critics who maintained that the enemy would always find it cheaper and easier to outwit antimissile systems than it was for the U.S. to build them.[101] Nike-X was eventually considered for both light and heavy deployment by the Johnson Administration, but it was never deployed, nor approved for deployment: it was declared too expensive and not effective enough,[102] and it remained at the research and development stage.

In 1967, pressures from two directions reached a critical point. First, domestic political pressure, especially from Congress, demanded that some type of ABM be deployed.[103] And second, the Johnson Administration was faced with indisputable evidence that the Soviet Union was mounting its own extensive antimissile effort.[104] The Soviet effort was disconcerting because of its potential to upset the carefully crafted

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[99] Ritchie, pp. 87-88.

[100] Kaplan, p. 345.

[101] Broad, "Star Wars Traced to Eisenhower Era," p. C3.

[102] Schneider, in Schneider and Holst, pp. 6-7.

[103] Weigley, p. 471.

[104] Broad, "Star Wars Traced to Eisenhower Era," p. C3.

nuclear balance the U.S. had strived to achieve. Soviet ABM systems might upset the nuclear balance by giving Soviet missiles and cities a high degree of invulnerability,[105] thereby destroying the foundations of Mutual Assured Destruction.

The current state of technology made McNamara skeptical about what either the Soviets or the U.S. could accomplish with ABMs. He believed that deployment of ABMs might set off an offensive arms race, a race to build weapons that could overcome ABM defenses.[106] Under orders from Johnson in 1967, however, McNamara was forced to fund production of Nike-X. McNamara was determined to do so in a way that would retard efforts to expand production into a full-scale nationwide defensive system.[107] Perhaps deliberately, he choose the weakest possible rationale for deploying an ABM,[108] a rationale that would support only limited deployment.

The Chinese Communists had successfully tested a thermonuclear device in May, 1966, and McNamara used China's marginal nuclear capability as his excuse. He announced Sentinel, as Nike-X had been renamed, an explicitly anti-Chinese, city-defending ABM, in a speech to editors and

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[105] Weigley, p. 471.

[106] Weigley, p. 471.

[107] Kaplan, p. 346.

[108] Weigley, p. 471.

publishers in San Francisco on 18 September 1967.[109] Sentinel, managed by the Army, was designed to protect the entire U.S., including Alaska and Hawaii.[110]

Plans for Sentinel were optimized to meet only a threat from China; for example, its radars had no southward-looking faces.[111] As a nationwide, thin, area defense, Sentinel would not only thwart Chinese attacks, but also counter accidental and unauthorized launches. In theory, it could be expanded to protect retaliatory forces as well, but McNamara emphasized for the benefit of the Soviet Union that Sentinel was not intended to blunt the effects of a Soviet attack.[112] Against a "primitive" attack, Sentinel was expected to hold U.S. fatalities below one million; against a Soviet attack, deployment of an ABM would be a "futile waste of our resources."[113]

By this time, McNamara had injected the element of mutuality in his Assured Destruction formulations by making

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[109] Kaplan, p. 346.

[110] U.S. Department of Defense, Statement of Secretary of Defense Clark M. Clifford: The Fiscal Year 1970-1974 Defense Program and 1970 Defense Budget (Washington, DC: U.S. Government Printing Office, 15 January 1969), p. 64.

[111] Schneider, in Holst and Schneider, p. 8.

[112] Bruce-Biggs, p. 288.

[113] U.S. Department of Defense, Statement of Secretary of Defense Robert S. McNamara Before the Senate Armed Services Committee on the Fiscal Year 1969-73 Defense Program and 1969 Defense Budget (Washington, DC: U.S. Government Printing Office, 22 January 1968), p. 63.

some explicit assumptions about the Soviet Union. He believed that all "reasonable men" could be persuaded to see things from his, and by extension, the U.S.'s, point of view. Specifically, he decided that what would deter the U.S. would also deter the Soviets, and that what deters could be quantified. He judged that "a capability on our part to destroy...one-fifth to one-fourth of her population and one-half of her industrial capacity would serve as an effective deterrent" to the Soviet Union.[114]

The flip side of the mutual ability of adversaries to destroy each other is their mutual vulnerability. Any efforts to impede the ability to destroy by definition reduce vulnerability. In order to overcome the effects of one nation's damage-limiting measures, that nation's adversary would be forced to build up its offense; thus, defenses did nothing more than fuel an offensive arms race. McNamara explained his theory in his final report as Secretary of Defense to the Congress: "It is precisely this mutual capacity to destroy one another, and conversely, our respective inability to prevent such destruction, that provides us both with the strongest possible motive to avoid

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[114] Robert S. McNamara, "Hearings on Military Posture Before the U.S. Congress, in P. Edward Haley, David M. Keithly, and Jack Merritt, Nuclear Strategy, Arms Control, and the Future (Boulder, CO: Westview Press, 1985), p. 88.

a strategic nuclear war."[115] "[T]o feel secure, the U.S. actually required the Soviet Union to have the capacity to destroy it."[116]

While McNamara was developing the concept of Mutual Assured Destruction, opposition to ABM deployment had surfaced, originally in academic circles.[117] During this period, the Soviet Union had achieved the ability to destroy the U.S., just as Mutual Assured Destruction required. Defenses were suddenly perceived to be destabilizing, and congressional opposition to ABMs materialized.[118] On 6 February 1969, a new Administration ordered a freeze on Sentinel construction pending a review of the situation.[119]

The McNamara regime had also had an impact on antiaircraft defenses. While most of the attention had been given to the high-visibility ABM debate for the past decade, antiaircraft defenses had not flourished during this period of relative inattention. On the contrary, the fate of antiaircraft defenses was tied irrevocably to that of the ABM. "No air defense system can provide significant `Damage Limiting' capabilities against the USSR unless accompanied by a strong,

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[115] U.S. Department of Defense, Statement of Secretary of Defense Robert S. McNamara...1969 Defense Budget, p. 46.

[116] Pipes, p. 24.

[117] Bruce-Biggs, p. 295.

[118] Huntington, in Kruzel, p. 24.

[119] Bruce-Biggs, p. 298.

effective ABM," the annual reports of the Secretary of Defense asserted.[120] Just like Sentinel, air defense systems could be effective against limited attacks, but funds were allocated for research and development of these defenses only. Modernization was put on hold. The U.S. Continental Air Defense maintained sixteen battalions of Nike-Hercules surface-to-air missiles, two Hawk batteries (for field army defense), 188 long-range Bomarc missiles, and 1,250 fighter-interceptor aircraft; there were 80,000 personnel assigned to the U.S. Air Defense Command in 1969.[121] In 1970, reduction of these defensive forces began.[122] The U.S. was abandoning air defense on the premise that it is not useful in the absence of missile defense.[123]

F. THE NIXON ADMINISTRATION

In his first presidential press conference on 27 January 1969, Nixon announced his Administration's goals. Although

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[120] U.S. Department of Defense, Statement of Secretary of Defense Robert S. McNamara Before the Senate Armed Services Committee on the Fiscal Year 1969-1973 Defense Program and 1969 Defense Budget, p. 69., and Statement of Secretary of Defense Clark M. Clifford - The Fiscal Year 1970-74 Defense Program and 1970 Defense Budget, p. 58.

[121] Johan J. Holst, "Missile Defense, the Soviet Union, and the Arms Race," in Holst and Schneider, p. 148.

[122] U.S. Department of Defense, Statement of Secretary of Defense Clark M. Clifford: The Fiscal Year 1970-1974 Defense Program and 1970 Defense Budget, p. 63.

[123] Alerting America: The Papers of the Committee on the Present Danger (Washington, DC: Pergamon-Brassey's, 1984), p. 42.

he had campaigned on a platform of superiority, he now reduced somewhat his requirements for offensive forces to "sufficiency." A sufficient deterrent, according to Nixon, was one that combined a capability to inflict Assured Destruction on the Soviet Union with a guarantee against the Soviet Union's development of an ability to inflict appreciably more damage on the U.S. than the U.S. could inflict on the Soviet Union. The ability of the Soviets to threaten was increasing: the Soviet arsenal was growing in size, and its accuracy was improving. "Sufficient" U.S. capabilities were also intended to deny other, smaller powers, such as China, the ability to damage the U.S.[124] Nixon tried to bring operational and declaratory policies together, and ensure that the U.S. could not only threaten but also actually fight a war.

Nixon had also concluded that there was more than enough evidence that the Soviet Union might not intend to observe the rules the U.S. had laid down for bilateral Mutual Assured Destruction.[125] Early in his term, Nixon consequently sent one of his advisors, Henry Kissinger, to the Pentagon, with a message. "Explicitly speaking for the President," Kissinger gave the Department of Defense its orders. There was to be an ABM, it would be cheaper than the previous, Democratic

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[124] Weigley, pp. 470-471.

[125] Van Cleave, p. 12.

Administration's ABM, and this new ABM would shoot down Soviet missiles, not just China's. When these directions were passed on to the Pentagon's research and development director, he concluded that city defense was impossible under the spending constraints that had been imposed along with the expanded ABM mission. The U.S. was therefore going to gear its ABM toward defending Minuteman silos. ICBMs were less valuable than cities, so their defense would not have to be completely leakproof.[126] The new ABM was to be consistent with extant technology.

Without any accompanying technological changes in its component parts, Sentinel's objectives and character had been redefined, and its name was replaced as well. Nixon announced his intention to deploy Safeguard to protect U.S. strategic forces on 14 March 1969.[127] In some circles, this was not a particularly popular decision. Safeguard barely managed to survive necessary Congressional votes: in the summer of 1969, it went forward only after a 50-50 vote in the Senate failed to remove it from an authorization bill.[128]

Nike-X components, originally designed for city defense, were to be used for the Safeguard system.[129] Although these

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[126] Kaplan, p. 350.

[127] Schneider, in Holst and Schneider, p. 9.

[128] Weigley, p. 472.

[129] Schneider, in Holst and Schneider, p. 7.

components were "large, cumbersome, and costly" for the system's new mission,[130] they helped keep Safeguard within the budget constraints the Administration insisted on.

It had been decided that Safeguard would be deployed in phases. Initially, it would defend two ICBM sites, at Grand Forks, North Dakota, and Malmstrom, Montana. After a reevaluation of the threat, follow-on deployments would be determined. The second phase therefore consisted of three options. The first option included defense of two additional Minuteman wings, a heavier complement of Sprint missiles at existing Safeguard sites, and defense of Washington, D.C. The second option would have provided defense for the U.S. bomber force. The third option was for area defense of cities.[131]

Although ABM defense of Minuteman was Safeguard's highest priority, Nixon personally felt strongly committed to the third option. "No president, with responsibility for the lives and safety of the American people," he contended, "could fail to provide such protection."[132]

Nixon had already done more than any of his predecessors for ABM defense. Prior to Safeguard, research, development, testing, and some prototypes had comprised the entire

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[130] William A. Davis, Jr., Asymmetries in U.S. and Soviet Strategic Defense Programs: Implications for Near-Term American Deployment Options (Washington, DC: Pergamon-Brassey's, 1986), p. 55.

[131] Schneider, in Holst and Schneider, p. 9.

[132] Van Cleave, pp. 12-13.

antimissile effort. But in 1970, engineers prepared to "bend metal" for the new system,[133] despite criticisms that none of the previous vulnerabilities had been remedied.[134]

The honeymoon was not to last, however. In September, 1969, the Soviet Union had surpassed the U.S. in the number of land-based ICBMs deployed,[135] and by the end of that year, the two nations had commenced Strategic Arms Limitations Talks. As it entered negotiations, the U.S. planned the extensive ABM deployment described above. Early in the talks, Safeguard's area defense component was dropped, and the U.S. subsequently lowered its requirements from the four sites Congress had already approved, to three, two, one, and then, by the time the talks were concluded, none.[136]

G. THE ANTIBALLISTIC MISSILE TREATY

The purpose of SALT, for the U.S., at least, was to twofold. First, it was an attempt to reduce the likelihood of strategic nuclear war between the U.S. and the Soviet Union. Second, it was intended to preserve U.S. strategic sufficiency through negotiations, rather than through

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[133] Broad, "Star Wars Traced to Eisenhower Era," p. C3.

[134] Kaplan, p. 351.

[135] Weigley, p. 472.

[136] Van Cleave, p. 13.

competition in an arms race.[137] Soviet observers noted that "U.S. strategic planners assumed that the deployment of any ballistic missile defense system (whether for territorial, area, or point defense) would compel the USSR to build up its offensive arsenal to a level that would enable it to inflict the intended damage on the U.S., the cost on the Soviet side being significantly lower than the price the US would have to pay for deploying its BMD systems.[138]

An agreement would relieve fiscal pressures the U.S. was experiencing in its endeavor to maintain "sufficiency." According to one observer, the U.S. SALT proposal "seems to have been highly influenced by an attempt to forestall heavy domestic investment in an ABM system of questionable effectiveness."[139] The combination of budgetary and technological constraints may have driven U.S. negotiations. Robert McFarlane notes that the treaty reflected for America "the practical reality that the state of the art in defensive technologies made effective defense infeasible."[140]

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[137] U.S. Department of Defense, Statement of Secretary of Defense Melvin R. Laird Before the Senate Armed Services Committee on the Fiscal Year 1972-1976 Defense Program and the 1972 Defense Budget, p. 15.

[138] Boris Surikov, SDI: Key to Security or Disaster? (Moscow: Progress Publishers, 1988), pp. 37-38.

[139] Michael J. Deane, The Role of Strategic Defense in Soviet Strategy (Coral Gables, FL: Advanced International Studies Institute, 1980), p. 47.

[140] Robert McFarlane, "Effective Strategic Policy," Foreign Affairs, Fall, 1988, p. 33-48.

SALT continued into 1972, when a compromise was finally reached on 22 May. The Soviets had altered their original position, and were unwilling to give up all ABM capabilities, so it was decided that each side would be permitted two sites: one for protection of its National Command Authority, and a second to defend a single strategic offensive forces site. This second site was to located not less than 1300 kilometers from the first.[141]

On 26 May 1972, the ABM Treaty was finally signed. A subsequent protocol agreement signed in 1974 reduced the number sites permitted from two to one. The treaty primarily limited deployment quantities: the number of launchers and interceptor missiles at that one site was restricted to one hundred of each, and the number of radars similarly regulated. There were no restrictions on research and development.[142] Obviously, the treaty left each side with little protection against incoming enemy ballistic missiles. The one hundred interceptor missiles permitted could not defend more than a fraction of either nation's deployed ICBMs; even if the system were to operate perfectly, it could destroy only one hundred out of the thousands of attacking warheads.[143]

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[141] Deane, pp. 51-52.

[142] Davis, p. 25.

[143] David Hobbs, An Illustrated Guide to Space Warfare (New York: Salamander Books, Ltd., 1986), p. 15.

After the protocol was signed, the U.S.'s Malmstrom site, already under construction, was subjected to "one of the most elaborate processes of demolition in the history of military construction...in order to leave no doubt that the site had been obliterated."[144] The ABM site at Grand Forks was put into operation on 1 April 1975, as warheads were fitted to the interceptors, but there had already been rumblings about the system's high cost and relative ineffectiveness. Not long after the Grand Forks site became operational, Congress voted to terminate it, and the site was deactivated in 1976.[145]

There was little opposition to the dissolution of the U.S. ABM system, limited as it had been. Kissinger notes that "we wound up with a curious coalition of the Pentagon and the arms controllers, both finally opposed to [ABM]: the Pentagon because it no longer made any military sense to put resources into a programme that was being systematically deprived of military utility and the arms control community because they saw in the strategic vulnerability of the U.S. a positive asset."[146]

H. THE LATE 1970S

In 1974, Secretary of Defense Schlesinger completed a study of issues designed to resolve U.S. anxiety about the

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[144] Davis, p. 25.

[145] Broad, "Star Wars Traced to Eisenhower Era," p. C3.

[146] Kissinger, p. 265.

strategic balance. This study, intended to encompass changes in targeting, the size of strategic nuclear forces, and hedges against Soviet achievement of exploitable superiority, resulted in adoption of several specific, evolutionary modifications that reflected Nixon's desire to ensure credible warfighting capabilities. The modifications, described in National Security Decision Memorandum 242, included counterforce targeting and were essentially a break with the assured destruction doctrines of the McNamara era. Although the "Schlesinger Shift" moved the U.S. closer to a policy of "Flexible Response," the U.S. did not actually possess the forces necessary to implement the changes. Perhaps as importantly, emphasis on strategic defense was absent from Schlesinger's proposal. Reduction of antiaircraft defenses continued as only the Nike-Hercules batteries in Alaska and Florida were retained; the fighter-interceptor force was also trimmed.[147]

The ABM Treaty permitted research and development activities, however, and these continued in spite of concerns that it was a waste of resources to pursue programs the U.S. had agreed not to deploy. The Site Defense program was intended to provide options for more effective defense of Minuteman silos than the currently deployed Safeguard system.

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[147] U.S. Department of Defense, Report of the Secretary of Defense James R. Schlesinger to the Congress on the FY 1975 Defense Budget and FY 1975-1979 Defense Program (Washington, DC: U.S. Government Printing Office, 4 March 1974), p. 68.

Little more than another modification of Nike-X, Site Defense would have used Sprint II missiles for interception. None of these missiles were actually built, but the system was tested without them in the late 1970s.[148] In spite of these "deficiencies," Site Defense and the programs that followed it fulfilled an important function. They enabled the U.S. to maintain an essential ABM technology development program, to hedge against technological surprise, to determine the technical feasibility of new ABM concepts, and to assist in the design and evaluation of offensive strategic ballistic missile systems.[149]

Site Defense was eventually replaced with the Low Altitude Defense (LoAD)/Sentry program, which was conceived as a limited number of mobile, self-contained units, each just large enough to hold an individual radar and an interceptor missile.[150] Essentially a "down-sized derivative" of its predecessor, LoAD/Sentry followed the trend of scaling down the size of components that began with the transition from Safeguard to Site Defense; these smaller defensive units could

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[148] Bruce-Biggs, p. 354.

[149] U.S. Department of Defense, Statement of Secretary of Defense Elliot L. Richardson Before the House Armed Services Committee on the FY 1974 Defense Budget and FY 1974-1978 Program, Tuesday, April 10, 1973 (Washington, DC: U.S. Government Printing Office, 39 March 1973), p. 64.

[150] Bruce-Biggs, p. 355.

be concealed in ICBM shelters.[151] The LoAD/Sentry program was active until 1984.[152]

Running parallel to the Systems Technology programs outlined above was another devoted to advanced technology. This research program was a broad, long-term effort which concentrated on five major areas of technology: discrimination, data processing, optics, radar, and interceptors.[153] Eventually, the Strategic Defense Initiative Organization took over management of these programs.

As the 1970s drew to a close, antiaircraft defenses in the U.S. were nearly nonexistent. Although older F-101 Voodoo aircraft were being replaced by newer F-4 Phantoms and F-106 Delta Darts, and the F-102 Delta Dagger had been completely eliminated from the inventory, the overall inventory of fighter-interceptor aircraft had suffered a net loss of 348 units during the decade.[154] The Nike-Hercules and Hawk batteries had been phased out in 1979,[155] so the U.S. was left with a total of 273 aircraft to defend itself against the

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[151] Davis, pp. 49-50.

[152] Davis, p. 26.

[153] U.S. Department of Defense, Report of Secretary of Defense...FY 1976, p. II-47.

[154] John M. Collins, U.S.-Soviet Military Balance: Concepts and Capabilities 1960-1980 (New York: McGraw-Hill, 1980), p. 466.

[155] Collins, The U.S.-Soviet Military Balance: Concepts and Capabilities 1960-1980, p. 464.

possibility of a Soviet bomber attack. The F-106s themselves were aging; plans had been considered as early as 1976 to replace them early in the 1980s with a follow-on interceptor--probably a version of the F-14, F-15, or F-16.[156] The Carter Administration never acted on these plans, however; instead, the Air Force, Navy, and Marine Corps were tasked with providing "additional interceptors in a crisis."[157]

In the late 1970s, renewed interest in strategic defenses grew out of the concern of U.S. strategists and public officials with the total absence of U.S. defenses against nuclear attack.[158] This interest was the result of two increasingly important factors. First, there was a growing fear in the military that land-based U.S. strategic missiles were becoming vulnerable to a surprise Soviet attack, and a belief that an ABM system might be able to protect at least some of these forces. Second, while ABM critics maintained that technology still had not solved the problems that existed

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[156] U.S. Department of Defense, Report of Secretary of Defense Donald H. Rumsfeld to the Congress on the FY 1977 Budget and Its Implications for the FY 1978 Authorization Request and the FY 1977-1981 Defense Programs (Washington, DC: U.S. Government Printing Office, 27 January 1976), p. 70.

[157] U.S. Department of Defense, Report of Secretary of Defense Harold Brown to the Congress on the FY 1980 Budget, FY 1981 Authorization Request and FY 1980-1984 Defense Programs (Washington, DC: U.S. Government Printing Office, 25 January 1979), p. 127.

[158] Huntington, in Kruzel, p. 26.

twenty years previously, the scientists involved in research and development kept reporting steady progress in advanced technologies such as lasers and particle beams.[159]

I. CARTER AND REAGAN

Carter's Presidential Directive 59 of 29 July 1980 had emphasized deterrence based on warfighting and the flexible response strategy, but "homeland defense played almost no part in deterrent plans."[160] Congressional interest in strategic defense was emerging, however, and the Republican Party's national platform endorsed the concept.[161]

As a Soviet observer reported, "The Reagan Administration displayed a fundamentally different attitude to BMD."[162] Indeed, with Reagan's inauguration, "the fortunes of BMD soared. Initially, the mainstream BMD development program at the time--the LoAD/Sentry system--received greatly increased funding and priority."[163] Although every president, beginning with Eisenhower, "had considered the possibility of substituting defence [for Massive Retaliation and its clones]

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[159] Broad, "Star Wars Traced to Eisenhower Era," p. C3.

[160] John M. Collins, The U.S.-Soviet Military Balance 1980-1985, p. 56.

[161] Huntington, in Kruzel, p. 26.

[162] Surikov, p. 37.

[163] Davis, p. viii.

and rejected it,"[164] Reagan not only raised the level of officially expressed interest in strategic defenses, he also set policy before technology.[165]

The Department of Defense contends that it was not until the early 1980s that "technological progress allowed us to accord again a high priority to strategic defenses,"[166] but poor financial support, rigorous requirements and the lack of official endorsement undoubtedly impeded efforts to improve extant technology. As one expert has noted, "Effective U.S. ABM and air defenses are now achievable and have been for 20 years if the goal is not a perfect defense of all cities and all targets."[167] The Reagan Administration attempted to focus a broad and expanding range of strategic concern and thought,[168] although Carter's Secretary of Defense, Harold Brown, must be given credit for laying the groundwork for programs that were implemented by his successor.

Secretary of Defense Caspar Weinberger's first annual report to the U.S. Congress was quite optimistic: "We have

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[164] Brown, p. 55.

[165] Payne and Gray, p. 821.

[166] U.S. Department of Defense, Annual Report to the Congress FY89 (Washington, DC: U.S. Government Printing Office, 1988), p. 47.

[167] Richard B. Foster, "The Necessity for Strategic Defense," Comparative Strategy, Vol. 6, No. 2, 1987, pp. 125-126.

[168] Huntington, in Kruzel, p. 27.

virtually ignored our strategic defensive systems for more than a decade," he said. "Our program ends these years of neglect."[169] To be sure, some of the modernization programs advocated by the Administration were implemented: as early as 1982, replacement of obsolete fighter-interceptors with F-15s began, radars were upgraded or replaced, and the Strategic Defense Initiative Organization was created. The SDI was hailed as a signal not of "the abandonment of deterrence, but [of] a desire to fortify it in a way that would actually reduce the risks of war."[170] It remains to be seen whether a research program will be accorded the status of prime deterrent as assured destruction policies were.

The concrete manifestations of Reagan's attempt to move U.S. strategic policy away from its absolute reliance on offensive forces for deterrence lacked the comprehensiveness necessary to effect a shift in doctrine. In spite of estimates that defenses through the mid-1990s are "cost-effective by a ratio of about 5:1,"[171] SDI remains a research program; other than improvements in warning systems and the

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[169] U.S. Department of Defense, Report of Secretary of Defense Caspar W. Weinberger to the Congress on the FY 1983 Budget, FY 1984 Authorization Request and FY 1983-1987 Defense Programs (Washington, DC: U.S. Government Printing Office, 8 February 1982), p. III-63.

[170] U.S. Department of Defense, Annual Report to the Congress FY89, p. 49.

[171] "SDI: Making America Secure" (Interview with the Technical Panel on Missile Defense of the George C. Marshall Institute), National Review, 1 April 1988, p, 42.

modernization of an air defense force restricted to peacetime surveillance, there have been essentially no changes in the U.S. force structure. No decision has been made to deploy even the single ABM site permitted by the ABM Treaty.

Although Reagan "raised the level of rhetoric" about ballistic missile defense and increased associated spending, his Administration "carefully avoided committing itself to preparations for destroying even one attacking missile."[172] The SDIO has spent the last five years searching for means to meet a "responsive threat," and thus relegated itself to "research without logical end."[173] As a conservative observer has somewhat cynically commented, the Department of Defense "spends $300 billion annually, none of it on defense."[174]

The SDI has managed, however, to fuel the strategic debate. Perhaps the most important change in military policy during the Reagan years was the "shift in emphasis between offensive and defensive strategies."[175] Where defensive strategies had received little or no attention since the ABM Treaty was signed, they now competed with offensive strategies for validity.

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[172] Codevilla, p. 5.

[173] Codevilla, p. 9.

[174] Tom Bethell, "Defenseless Cowards," The American Spectator, March, 1989, p. 11.

[175] Huntington, in Kruzel, p. 23.

"Critics condemn the SDI program," the Department of Defense contends, "as jettisoning certain deterrence in favor of ineffective defense."[176] These critics fail to comprehend the innate compatibility of the two concepts. Deterrence essentially discourages the enemy from taking military action; defense reduces costs and risks in the event deterrence fails. While deterrence works on an enemy's intentions, defenses reduce the enemy's capability to damage.[177] Defense comprises merely one form of deterrence, namely deterrence through denial.

The official position of the White House is that SDI "offers an opportunity to shift deterrence to a safer and more stable basis through greater reliance on strategic defenses. Such defenses, which threaten no one, would enhance deterrence by injecting greater uncertainties into Soviet estimates of their ability to achieve their military objectives should they attempt a first strike. Even less than perfect defense could increase stability by denying the Soviets confidence that they could achieve meaningful military goals, thereby eliminating incentives for a Soviet first strike."[178] The Soviets, in view of the defensive measures they themselves have taken,

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[176] U.S. Department of Defense, Annual Report to the Congress FY89, p. 48.

[177] Glenn H. Snyder, Deterrence and Defense (Princeton, NJ: Princeton University Press, 1961), p. 3.

[178] National Security Strategy of the United States, p. 15.

undoubtedly recognize that it is unnecessary to choose between deterrence and defense, since they can - and do - coexist and complement each other.

Some observers believe that although the SDI might enable an eventual shift from offensive to defensive strategies, such a transition would have to wait until political differences between the U.S. and the Soviet Union were alleviated. Even so, SDI might "buy time" for the resolution of existing or future disputes.[179] If the Soviets were not assured of a "free ride" for their offensive ballistic missiles, they might be more willing to settle controversies at the conference table rather than on the battlefield.

General Secretary of the Soviet Union Gorbachev has condemned SDI in no uncertain terms. "SDI is very dangerous," he says. "This project will, no doubt, whip up the arms race in all areas, which means that the threat of war will increase." A quick review of post-World War II history would reveal that in most instances, when such action-reaction phenomena occurred, it was usually the U.S. that was reacting to Soviet maneuvers. One need only examine the early years of the U.S. space program to confirm this. U.S. strategist Colin S. Gray also disagrees that deployment of SDI would in itself be the cause of an arms race. "This objection is really no more than a truism," he has written. "Any U.S.

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[179] Gray, "Strategic Defenses," p. 52.

strategic force development which threatens to thwart some aspect of Soviet strategy, to deny some measure of military advantage, may serve as fuel for Soviet competitive behavior."[180] As Harold Brown so aptly put it, "When we build, they build; when we don't build, they build."[181]

Arms control and SDI should not be perceived as incompatible or in competition. The two can be mutually reinforcing goals, since both are intended to enhance security and stability. There is a kind of synergism between the two efforts. "Fewer strategic offensive weapons simplifies the task of defending against them, while the prospect of effective strategic defenses discourages Soviet reliance on their preemptive offensive nuclear strategy."[182]

The Soviet Union's most frequent objection to SDI is that it undermines the ABM Treaty, which the Soviets, in spite of their own extensive defensive efforts, insist must be strictly complied with. "Under currently prevailing conditions," one U.S. expert notes, "the Soviets consider it imperative to keep U.S. BMD efforts under control by perpetuating the ABM Treaty regime, even though this imposes constraints on Soviet BMD activities as well."[183] Soviet strategists, perhaps in a fit

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[180] Gray, "Strategic Defenses," p. 52.

[181] Cited in Bruce-Biggs, p. 387.

[182] Rowny, p. 24.

[183] Yost, Soviet Ballistic Missile Defense and the Western Alliance, p. 7.

of mirror-imaging, further argue that the "cardinal aim" of SDI "is to enable the USA to execute a first strike. The purpose of the U.S. BMD system would be to rule out the Soviet Union's retaliatory strike."[184] As has been previously explained, the offensive or defensive nature of a weapon is not inherent in that weapon, but exists in the end use for which that weapon is intended.

J. CIVIL DEFENSE

According to the Soviets, any attempt in the capitalist world to establish a civil defense system is "doomed to failure," because the private ownership of property precludes the use of land, buildings, transportation and other facilities necessary for a civil defense program.[185] This Soviet opinion may in fact reflect accurately the prospects for deployment in the U.S. of a civil defense program. For the past forty years, efforts to create passive defenses of population, economic assets and even government facilities have met with little success. As the Committee on the Present Danger has stated, "There is no U.S. counterpart [to Soviet civil defense programs], and perhaps there cannot be, given the unattractiveness of civil defense to an open society."[186]

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[184] Surikov, p. 36.

[185] Harriet Fast Scott and William F. Scott, The Soviet Control Structure: Capabilities for Wartime Survival (New York: Crane Russak, 1983), p. 97.

[186] Alerting America, p. 58.

The perceived threat of air attack led to formation in the 1920s and 1930s of a U.S. civil defense apparatus which took its cue from similar "air raid precautions" in Britain at the time. President Roosevelt put Fiorella LaGuardia - assisted by Mrs. Roosevelt - in charge of civil defense during World War II, but as soon as the war ended, the civil defense effort ended, too, along with rationing, victory gardens, and other reminders of the war.[187]

The Federal Civil Defense Agency was organized in 1949 by President Truman in response to the Soviet Union's detonation of its first atomic bomb.[188] State and local agencies proliferated at first, and the FCDA's motto became "Survive, Recover, and Win."[189]

During the 1950s, the government's civil defense efforts had the full cooperation of the press and other groups, and therefore these programs received a great deal of attention. The Advertising Council provided free coverage; newspapers and magazines printed thousands of articles about civil defense. Operation Alert exercises were conducted to help the

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[187] Bruce-Biggs, pp. 29-30 and 49.

[188] Spencer R. Weart, "History of American Attitudes to Civil Defense," p. 12; and John Dowling, "FEMA: Programs, Problems, and Accomplishments," p. 35; both in John Dowling and Evans M. Harrell, eds., Civil Defense: A Choice of Disasters (New York: American Institute of Physics, 1987).

[189] Weart, in Dowling and Harrell, p. 13.

population practice its role in a nuclear war. The FCDA taught citizens what to do "when the bombers came."[190]

Military support was not as strong. Although the Army identified millions of cubic yards of usable shelter space, mainly for military installations and defense industries, nothing was done with that information. The CONELRAD (Control of Electronic Radiation) system was initiated in cooperation with commercial radio stations during this period, although the messages it delivers have since been purged of references to enemy attack. There were educational films, discussions of evacuation schemes and some attempts to spur interest in a shelter program, but the basics of civil defense were defined as "dig, die, or get out."[191]

By 1957, calculations suggested that about 80% of all deaths in a nuclear war would be caused by fallout, and studies recommended an elaborate nationwide shelter program as part of an overall defense program. FCDA urged the government to invest in these shelters, and further to provide mortgage insurance and tax breaks for citizens who built their own.[192] One of the objectives of the National Defense Highway Act of 1957 was to help defend the country: interstate highways were designed to loop around cities, assuming nuclear

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[190] Weart, in Dowling and Harrell, pp. 13-14.

[191] Bruce-Biggs, pp. 69-71.

[192] Kaplan, p. 126.

explosions would gut city centers; expressways were laid out to facilitate evacuation.[194]

The Gaither Committee, commissioned by Eisenhower to evaluate civil defense, also recommended a massive program in a report it presented to the President in November, 1957. The committee, however, had decided that civil defense should take "a back seat to what they saw as the much more pressing need of building up a much larger offensive missile force and protecting it from attack."[195]

When the Kennedy Administration took office, the new president felt he had to approve some kind of civil defense program, mainly because the Berlin crisis was beginning to heat up. In May, Kennedy announced that he was increasing federal efforts for a nationwide fallout shelter program, and in the 15 September issue of Life magazine, he addressed a letter to the magazine's readers. The issue featured a large section on fallout shelters, including directions on how to build them and blueprints.[196]

By December, however, the initial enthusiasm had begun to cool. Not only had the urgency of the Berlin crisis passed, but there were so many critics of the civil defense effort

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[194] Bruce-Biggs, p. 95.

[195] Kaplan, pp. 134-135.

[196] Kaplan, pp. 309-310.

that it was turning into a politically unadvisable cause.[197] McNamara maintained that it was "the responsibility of each individual to prepare himself and his family" for a nuclear strike, and civil defense seemed to be taking on characteristics that indicated it was meant only for the upper classes.[198] This was the kiss of death as far as the Democratic administration was concerned. It was increasingly difficult to get people seriously interested in the effort, and Congress routinely decimated budget requests for civil defense.[199] Other than controversy, just about the only thing to come out of the civil defense programs of the late 1950s and early 1960s was construction of three underground command facilities; these were for the Strategic Air Command, the North American Air Defense command, and the Alternate National Military Command Center.[200]

By 1964, McNamara had aligned his civil defense rhetoric with that of other strategic defensive concepts, maintaining that civil defense, just like air defense, was useless without leakproof ABM defenses.[201]

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[197] Kaplan, p. 313.

[198] Bruce-Biggs, p. 167.

[199] Kaplan, p. 314.

[200] Yost, Soviet Ballistic Missile Defense and the Western Alliance, p. 125.

[201] Bruce-Biggs, p. 253.

The next Administration to devote attention to civil defense was Carter's, but this was largely a paper exercise. In 1980, Presidential Directive 41 advocated "crisis relocation," or the evacuation of urban populations to "host" areas.[202] Similarly, Presidential Directive 58 included supported evacuation of military and civilian leaders and the construction of new, hardened shelters for key personnel.[203]

During the Carter Administration, and after several organizational changes, FCDA became part of the Federal Emergency Management Agency, which combined civil defense with natural disaster relief and preparedness functions under a single umbrella.[204] FEMA's mission is to provide "guidance and technical and financial assistance to state and local governments in the development of their preparedness plans,"[205] but only about 10% of FEMA's budget is devoted to civil defense,[206] and that budget is only about one-tenth of one percent of total U.S. defense expenditures.[207] In contrast to

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[202] Bruce-Biggs, p. 397.

[203] Jeffrey Richelson, "PD-59, NDSS-3, and the Reagan Strategic Modernization Program," The Journal of Strategic Studies, Vol. 6, No. 2, p. 130.

[204] Dowling, in Dowling and Harrell, p. 34.

[205] Federal Emergency Management Agency (FEMA), Annual Report 1984, p. 5.

[206] FEMA, p. 34.

[207] Ivan Tyrrell, The Survival Option (London: Jonathan Cape, 1982), p. 40.

the Soviet Union, which devotes about $6 billion annually to civil defense,[208] the U.S. spends about a dollar per person per year on civil defense. Comparison of U.S. spending on civil defense to that of other Western nations produces analogous results: The Swiss and Norwegians spend about $10 per person annually; West Germany and Finland, about $4.[209]

FEMA has completed surveys of over one and a half million buildings and identified 394.2 million prospective shelter spaces.[210] These shelters would provide fallout but not blast protection, and are mostly in the basements of public buildings, mines, subways, and so on.[211] They include unfiltered ventilation systems, which for the most part run on electricity from municipal power sources - something which is likely to be unavailable when the shelters are needed.[212]

FEMA is also responsible for the Emergency Broadcast System, a job which it shares with the 47th Communications Group at NORAD. The 47th Communications Group is responsible

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[208] Brian D. Dailey, "Deception, Perceptions Management and Self-Deception in Arms Control: An Examination of the ABM Treaty," in Brian D. Dailey and Patrick J. Parker, Soviet Strategic Deception (Lexington, MA: D.C. Heath and Company, 1987), p. 243.

[209] Tyrrell, p. 41.

[210] FEMA, p. 9.

[211] Tyrrell, p. 41.

[212] Tyrrell, p. 43.

for activating the system if, for some reason, FEMA cannot.[213] If the NORAD Commander decides the U.S. is being attacked, he informs a civil defense representative at command headquarters in Cheyenne Mountain, Colorado. The representative transmits the warning through both the EBS and the National Warning System.[214]

If the system were to be activated, the U.S. populace would have some warning of impending attack, although the utility of this warning in the absence of adequate shelters, evacuation plans, sources of food, water, air, communications, and so on, is questionable. "Protection for the American people and production base is presently contingent upon successful counterforce second strikes, escalation control, and a quick cease-fire," notes one American expert.[215]

Some observers believe that "the inability of the U.S. to protect its citizens, leadership and industrial resources...undermines the credibility of the U.S. nuclear deterrent,"[216] but this situation is unlikely to change. The

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[213] Allan W. Ackerson, "Job Control Ensures Equipment, Maintenance Always Ready for Mission," The Space Observer, 7 July 1988, p. 8.

[214] James C. Breese and D.L. Narver, Jr., "Improved Shelters and Accessories," in Eugene P. Wigner, ed., Survival and the Bomb (Bloomington, IN: Indiana University Press, 1969), p. 60.

[215] Collins, The U.S.-Soviet Military Balance 1980-1985, p. 60.

[216] Van Cleave, p. 32.

cost of civil defense efforts is viewed as prohibitive, and there is an underlying "conviction that such installations would soon become pointless in a large-scale nuclear war."[217] Many experts contend that there will never be a substantial civil defense effort in the U.S. "There is every reason to believe," they state, "that a strong initiative in civil defense would have the same results today as [previously]: political divisions, heightened anxiety, some scattered pockets of useful activity, and a final reaction of apathy and despair."[218]

K. SUMMARY

Advocates of strategic defenses point out that the U.S. nuclear stockpile has diminished in both numbers and megatonnage while the Soviet Union has massively increased both; arms control has failed to prevent the deterioration of the U.S. position relative to its major adversary. The U.S. may neither wish nor be able to restore the military balance by addition of offensive means alone.[219] The Department of Defense acknowledges that "Our future ability to maintain an

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[217] Yost, Soviet Ballistic Missile Defense and the Western Alliance, p. 125.

[218] Weart, in Dowling and Harrell, p. 29.

[219] Hoffman, in Haley and Merritt, p. 30.

acceptable strategic balance depends on our developing both U.S. strategic offensive and defensive capabilities."[220]

As a consequence of the lack of homeland defenses, U.S. willingness to carry out its retaliatory threat loses credibility, as does its promise of a nuclear umbrella to shield its allies.[221] Defense expert John M. Collins has written that "U.S. promises to provide a nuclear umbrella for allies lost credibility [without homeland defenses], because we could not unleash assured destruction strikes against the Soviet Union to defend NATO or Asian friends without risking national suicide."[222]

The Reagan White House has also promoted strategic defense as the solution to arms control: "By reducing the military value of ballistic missiles, strategic defenses would facilitate Soviet acceptance of significant arms reduction agreements."[223] And, of course, if ABMs were again deployed, antiaircraft and civil defenses might again acquire the utility they lost when ABMs were dismantled.

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[220] U.S. Department of Defense, Annual Report to the Congress FY89, p. 28.

[221] Collins, The U.S.-Soviet Military Balance 1980-1985, p. 4.

[222] Collins, U.S.-Soviet Military Balance 1980-1985, p. 4.

[223] National Security Strategy of the United States, p. 15.

Morality has also entered into the debate: current American policies are described as contravening American principles, since threatening to kill the civilian population of an opponent is genocide; these policies also defy common sense, because deliberately leaving one's own population undefended when means to defend (even if imperfectly) do exist is suicidal.[224] "What is disturbing about the present situation," one writer states, "is not so much that the country is undefended as that it is undefended because we are afraid to defend ourselves."[225]

Perhaps the most appealing arguments for strategic defense are those which have been couched in the least provocative language. These fall into four basic categories, some of which have been alluded to above. First is the contention that the U.S. "should have means of damage limitation other than relying on Soviet restraint in the face of U.S. retaliatory threats,"[226] which is suggested in the Department of Defense's Annual Report as it defines Direct Defense as "deterrence through denial."[227]

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[224] Foster, p. 137.

[225] Bethell, p. 11.

[226] Yost, Soviet Ballistic Missile Defense and the Western Alliance, p. 280.

[227] U.S. Department of Defense, Annual Report to the Congress FY 1989, p. 46.

Second is the case that supports strategic defenses as a means to maintain the credibility of U.S. strategy.[228] This argument contends that credibility rests not only on the survivability of U.S. retaliatory forces, but also on the willingness of the U.S. to risk the lives of millions of Americans.

A corollary to this argument is that which stresses the importance of strategic defenses if deterrence should fail. Depending on the extent to which they are deployed, defenses can protect population, economic resources, property, and retaliatory forces from attacking missiles and aircraft.

The fourth argument assumes that strategic defenses could cause uncertainties for Soviet attack planners.[229] This uncertainty could further deter an attack. Even if an attack is launched, Soviet planners will not know which, if any, of their offensive forces will actually impact their targets. At a minimum, planners would be forced to use many more offensive weapons to attack a defended target than one which is completely vulnerable.

"At the very least," a U.S. strategist contends, "it would be grossly irresponsible and imprudent to refuse the challenge to try to live in greater safety with nuclear weapons that

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[228] Robert McFarlane, p. 47.

[229] Yost, Soviet Ballistic Missile Defense and the Western Alliance, p. 303.

cannot be disinvented."[230] A recent report issued by the President's Commission on Integrated Long-Term Strategy emphasizes the need for both active and passive defenses against Soviet missiles to deter Soviet attacks on theater and intercontinental targets.[231] The Reagan Administration has proposed to the Soviet Union a cooperative shift from reliance on offensive means alone to deter. "Consistent with our belief that strategic defenses may offer a safer, more stable basis for deterrence," Reagan has said, "we seek Soviet agreement for an orderly transition to a more defense-reliant world."[232] Whether this transition occurs remains to be seen. Considering the total lack of commitment to strategic defenses beyond the research and development stage in the U.S., things do not look promising.

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[230] Gray, "Strategic Defenses," p. 51.

[231] Discriminate Deterrence (Report of the Commission on Integrated Long-Term Strategy), January, 1988, p. 51.

[232] National Security Strategy of the United States, p. 17.

IV. STRATEGIC DEFENSE AND THE SOVIET UNION

A. BACKGROUND

The Soviet Union's attitude toward strategic defenses differs greatly from that of the United States. History and geography have an impact on this attitude, as do ideology and the resulting national style. However, the availability of nuclear weapons has probably had the greatest effect on the Soviet Union's perceptions of the need to defend itself, although recent Soviet pronouncements seem to indicate that such a task is hopeless.

"[I]t is imperative to realize that the nature of nuclear arms leaves no hope that any of the states will be able to protect itself solely by means of military technology, through creating the most powerful defence," a Soviet expert on weapons of mass destruction has said.[233] The notion expressed by this expert, that pursuit of worthwhile defenses is a futile effort, is based on certain presumptions about the nature of nuclear war, which the Soviets would have the rest of the world believe is not survivable. As General Secretary Mikhail Gorbachev says, "Everyone seems to agree that there

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[233] Surikov, p. 11.

would be neither winners nor losers in such a war. There would be no survivors. It is a mortal threat for all."[234]

"[N]ow, if a war breaks out, every living thing will be wiped off the face of the earth," the General Secretary continues, encouraging his audience to believe that "nuclear war is unwinnable."[235] Nuclear war "would render us all helpless and defenseless," the Soviet expert says in confirmation of Gorbachev's statement. "Nothing that is living will survive."[236]

These dire warnings would seem to contraindicate strategic defenses, and support the contention that "Security can no longer be assured by military means - neither by the use of arms or deterrence, nor by continued perfection of the `sword' and the `shield.' The only way to security," according to Gorbachev, "is through political decisions and disarmament."[237]

If this is so, why, is the Soviet Union "doing all that the United States is doing [in strategic defense research]? ...I guess we are engaged in research, basic research, which relates to these aspects which are covered in the SDI of the United States," as Gorbachev admitted in November, 1987? As the U.S. Department of Defense contends, "the Soviet effort

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[234] Mikhail S. Gorbachev, Perestroika (New York: Harper & Row, 1987), p. 11.

[235] Gorbachev, p. 138.

[236] Surikov, pp. 9, 10.

[237] Gorbachev, p. 141.

into all aspects of strategic defense has been consistently more vigorous than that of the United States."[238] This effort has resulted in a highly developed strategic defensive infrastructure that includes anti-ballistic missiles, surface-to-air missiles, air defense interceptors, antisatellite capabilities, ABM and air defense radars and a pervasive civil defense program along with appropriate weaponry and support systems for each of these components.[239]

This paper suggests that, in spite of rhetoric which may be intended mainly for Western public consumption, the Soviets believe they "can wage nuclear war and win it, and behave accordingly. The lesson of the Great Patriotic War, as [Soviet leaders] seem to have learned it, is that Soviet resiliency and resolve will again prevail."[240] How does the West, in particular the United States and its allies, resolve the dissonance between what the Soviet Union is saying, and what its real intentions are? Although definite answers to all questions about the Soviet Union can not be given, Soviet history, trends, capabilities, force structures, and writings-military writings in particular--can provide some indication of the "sincerity" of such pronouncements as those quoted above.

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[238] U.S. Department of Defense, Soviet Military Power: An Assessment of the Threat 1988 (Washington, DC: U.S. Government Printing Office, 1988), p. 55.

[239] Van Cleave, p. 19.

[240] Scott and Scott, p. ix.

B. DECEPTION

"Soviet strategy, like Soviet thinking, has always been devious where American has been direct," comments one observer.[241] Many authors have addressed Soviet deceptive practices,[242] and it has been suggested that the Soviet Union functions under an ethical system which differs greatly from the Judeo-Christian ethics adopted by most Western nations.[243] This ethical system, based on the declaration of good (rather than the prohibition of evil, best exemplified by the "thou shalt nots" of the Ten Commandments), hinges on the assumption that the ends justify the means. If, therefore, deception advances the Marxist-Leninist cause, as advocated by the Communist Party, it is not only acceptable, but intrinsically desirable behavior. "[T]he predisposition to such practices and the defense of them constitutes a commitment by the Soviets, albeit culturological or strategic, to the widespread

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[241] T.R. Fehrenbach, This Kind of War, Korea: A Study in Unpreparedness (New York: Macmillan, 1963), p. 64.

[242] See, for example, Dailey and Parker, cited above; and Diane Chotikul, The Soviet Theory of Reflexive Control in Historical and Psychocultural Perspective: A Preliminary Study (Monterey, CA: Naval Postgraduate School, 1986).

[243] See, for instance, Vladimir Lefebvre, Algebra of Conscience (Boston: D. Reidel, 1982).

and systematic use of deceit as policy, which makes appraisal of threat difficult...."[244]

Awareness of the basic ethical differences in the fundamental precepts under which the two superpowers operate has two desirable consequences for Western observers. First, it should encourage resistance to mirror-imaging, a Western tendency which the Soviets promote. "The main condition for success in this propagandistic influence is masking the very fact of influence," Vladimir Lefebvre has pointed out. "For example, this could be done by suggesting the symmetry of Soviet and American societies ("You have red tape and we have red tape;" "Way down deep we are all alike;" "You want peace and we want peace"). As a result, according to propagandists' plans, the Western audience would not doubt the sincerity of the Soviet representatives or other sources of information."[245] Second, it should prompt an appreciation of the fact that Soviet deceptive practices do, indeed, exist, and are a valued method of operation for the Soviet Union.

It has been pointed out that "in no other state do political words stand in such contrast to reality as in

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[244] Roger A. Beaumont, Maskirovka: Soviet Camouflage, Concealment and Deception, Stratech Studies SS 82-1, Center for Strategic Technology, Texas A & M University, College Station, TX, November, 1982, p. 36, as cited in Chotikul, p. 65.

[245] Vladimir Lefebvre, Reflexive Control: The Soviet Concept of Influence on Adversary's Decision Making Process (Englewood, CO: Science Applications, Inc., SAI-84-024-FSRC-E, February, 1984), p. 4, as cited in Chotikul, p. 10.

Russia, [although]...it is common practice to dilute vranyo with injections of truth."[246] ("Vranyo" refers to untruths which have some grounding in reality, as opposed to "lozh," which are actual lies and total untruths.[247]) As one Western expert has noted, "Some observers have asserted that the Soviets no longer seek their traditional goal of world conquest through revolution. Since the early 1970s and the advent of detente, such views have been expressed quite forcefully (and hopefully) in the West....But world history since 1918 demonstrates that Soviet foreign policy cannot be accepted at face value."[248]

Certainly, the West should listen to what the Soviets are saying, but it is at least as important that the West carefully examine Soviet actions as well.[249] To this end, one must look at Soviet theories of deterrence and damage limitation, and the nature of psychological and material preparations the Soviet Union has made in order to ready itself for the possibility of war.

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[246] Ronald Hingley, The Russian Mind (New York: Charles Scribner's Sons, 1977), p. 97.

[247] Chotikul, p. 66.

[248] Kurt London, ed., The Soviet Union in World Politics (Boulder, CO: Westview Press, 1980), p. ix.

[249] U.S. Department of Defense, Soviet Military Power: An Assessment of the Threat 1988, p. 13.

C. DETERRENCE

Because "[h]istory has taught the Soviet Union to depend mainly on itself in insuring its security and that of its friends,"[250] ideas of mutual self-interest and mutual vulnerability are both unacceptable premises to Soviet concepts of deterrence. In direct contrast to Western formulations of Mutual Assured Destruction, no concept "is more alien to Soviet thought than viewing Soviet vulnerability to enemy weapons as an advantageous situation to be perpetuated indefinitely."[251]

The Soviets firmly believe that both offensive forces and defensive systems contribute to stability and deterrence,[252] in a dialectical relationship that will subsequently be examined herein. While the West has largely dissociated concepts of defense from methods of deterrence, Soviet military thought encompasses no such distinction[253] between deterrence and, as an integral component of military capabilities, the ability to defend oneself.

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[250] Nikolai Talensky, "Missile Defense: A Response to Aggression," in Brzezinski, p. 218.

[251] Yost, Soviet Ballistic Missile Defense and the Western Alliance, p. 91.

[252] Talensky, in Brzezinski, p. 215.

[253] Stanley Sienkiewicz, "Soviet Nuclear Doctrine and the Prospects for Strategic Arms Control." In Derek Leebaert, ed., Soviet Military Thinking (London: George Allen & Unwin Ltd., 1981), p. 84.

The Soviets view defense as a specific means for reducing a nation's dependence on the "goodwill and designs" of adversaries for security.[254] They are well aware that "even partially effective defenses can provide a significant deterrent to aggression."[255]

None of this is to say that the Soviet Union ignores the contribution of offensive capabilities and of the credibility of their warfighting posture to the credibility of their deterrent. "The fact that [a peaceable, non-aggressive state] is in possession of a combination of anti-missile means and effective nuclear rocket forces," notes General Talensky, "serves to promote the task of deterring a potential aggressor, insuring its own security, and maintaining the stability of world peace."[256] The Soviets may, of course, credit defensive systems with greater capabilities than the United States does, which would consequently induce the Soviets to magnify the contribution of defenses to deterrence.[257]

It is important to recognize this damage-limitation-through-defense aspect of Soviet concepts of deterrence, since it differs extensively from Western theories. The Soviets

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[254] Talensky, in Brzezinski, p. 216.

[255] U.S. Department of Defense, Annual Report to the Congress FY 1989, pp. 48-49.

[256] Talensky, in Brzezinski, p. 215.

[257] Hoffman, in Haley and Merritt, p. 30.

recognize offense as a means of defense which results when offensive weapons are used in a damage-limitation role to destroy an opponents weapons before those weapons are used. The Soviets see no political or military utility in strategies which diminish prospects for survival in a nuclear war, and look "beyond the offensive requirements needed to destroy the opponent...to the defensive requirements that would permit the Soviet Union to survive and win" such a war.[258]

Although Khrushchev premised his view of the Soviet deterrent posture on a secure capability to retaliate,[259] the Soviets see purely counterforce strategies as the basis for deterrence by defense as vitally flawed. "It is only the aggressor that can resort to [counterforce strategies] before the first rocket salvos are fired, before war actually breaks out," according to General Talensky. "In order to destroy the enemy's nuclear-rocket installations they must be hit before they launch their rockets, which means that the peaceable side, the aggressor's objective, will by fending off nuclear attack be forced to deal the first strike."[260]

D. SURPRISE ATTACK

While on the surface the concept of a surprise attack appears inherently offensive, the use of a first strike as a

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[258] Deane, p. 3.

[259] Sienkiewicz, in Leebaert, p. 75.

[260] Talensky, in Brzezinski, p. 213.

means of defense meshes practically with Soviet concepts of damage limitation, because any measure that limits damage to the Soviet Union is considered by the Soviets to be defensive in nature.

First strikes, which may sometimes take the form of surprise attacks, are generally agreed to be a very decisive form of military action. Soviet military planners could easily calculate the effects of a large-scale nuclear attack, particularly against an unprepared, unwitting opponent. While American planners concluded that the possibility of a surprise attack meant that the reliable capability to strike second, or retaliate, would constitute the American deterrent, Soviet planners determined that a different course of action was in the best interests of the Soviet Union. This course of action, preemption, is, to Soviet planners, inherently a defensive idea predicated upon a traditional military solution. A preemptive capability, because of the inherent threat of retaliation, had to be supported by the erection of suitable defenses, no matter what the cost of these defenses,[261] but preemption gave the Soviets a relative advantage here, too, because their defenses needed to protect only against a retaliatory strike rather than a first strike.[262] When damage limitation as a strategy is taken into

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[261] Sienkiewicz, in Leebaert, pp. 83, 84.

[262] Davis, p. 63.

consideration, it is easier to understand Soviet development and deployment of defensive systems which incorporate technologies that the U.S. finds unacceptable because of their limitations. Soviet defenses are not an end in themselves, but components of a much larger, coordinated system.[263]

The logic of utilizing an immanently offensive action as a means of defense may appear to be somewhat convoluted, but according to some Western experts on Soviet military thinking, if the Soviets cannot yet confidently rule out the possibility that "the West could successfully mount a surprise attack, then one continues to pursue all plausible means to preclude it."[264] This seems to render the distinction between offensive and defensive actions dependent to a great extent upon one's point of view.

In this vein, Samuel P. Huntington maintains that while weapons, technology, and military capabilities can be usefully differentiated in a variety of ways, the offense/defense distinction resides far more in how these things are used than in their inherent nature. He states that the distinction is valid when applied to how military forces will be used, and in relation to a state's overall foreign policy goals. When a state initiates the use of military force, its strategy or policy is considered to be offensive; if it uses military

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[263] Sayre Stevens, "Speculations on Soviet Responses to SDI," Signal, December, 1986, p. 123.

[264] Sienkiewicz, in Leebaert, p. 82.

forces "primarily to prevent the enemy" from attacking, destroying, seizing or holding its assets, its actions are defensive.[265] When examined in this context, as a means specifically to prevent the enemy from attacking, the defensive nature of a preemptive attack becomes clearer.

What might seem a "use-it-or-lose-it" approach to conflict to some - particularly in the West - is a rational means of survival to the Soviet Union. Soviet ideology mandates a national defense that can effectively shield the communist system and ensure its preservation; ultimately, that defense "depends on the destruction of the opposing system by offensive means."[266] General Talensky felt "it is theoretically and technically possible to counterbalance the absolute weapons of attack with equally absolute weapons of defense, thereby objectively eliminating war regardless of the desires of resisting governments." In other words, nuclear rockets could be fought with nuclear rockets.[267] As Huntington proposed, defensiveness resides in the use, not the weapon itself.

The Soviet Union's view of the defensive uses of offensive means must be fully understood within the context of Soviet

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[265] Huntington, in Kruzel, pp. 36-7.

[266] Michael J. Deane and Ilana Kass, "Why Strategic Defense But Not Defensive Strategy?" Signal, November, 1987, p. 104.

[267] Talensky, in Brzezinski, p. 213.

strategic doctrine. This "Soviet preference for an offensive strategy...is complemented by a requirement for the greatest possible limitation of damage to Soviet political, economic, and military order."[268] By dominating an initial exchange of nuclear weapons through preemption when war appears inevitable, the Soviets could limit the amount of damage an opponent might inflict and thus reduce the requirements for defensive systems.[269] Although the Soviets assume a retaliatory strike in response to their preemption of a first strike,[270] the damage inflicted by this retaliation would be lessened still further by various means of defense, both passive and active, civil and military.[271] The ultimate combination of offensive strikes and defensive preparations sought by the Soviet Union is intended to restrict the damage U.S. retaliation could cause to Soviet society,[272] and thereby frustrate U.S. strategy.

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[268] Deane, pp. 19-20.

[269] Sayre Stevens, "Ballistic Missile Defense in the Soviet Union," Current History, October, 1985, p. 345.

[270] Deane, p. 19.

[271] Sayre Stevens, "The Soviet BMD Program," in Carter and Schwartz, p. 187.

[272] U.S. Department of Defense, Soviet Military Power: An Assessment of the Threat 1988, p. 102.

E. THE OFFENSE/DEFENSE DIALECTIC

As is readily apparent from the preceding discussion, the Soviets find it ideologically impossible to rely on a strategy predicated solely on defensive measures. "Strategic defense and then counterforce cannot under modern conditions ensure the achievement of the war's decisive aims," according to Marshal Sokolovsky. "This does not mean that defense as a...temporary type of...action will have no place in a future war."[273]

While defense cannot serve as the basic form of Soviet military activity, it is an integral part of Soviet offensive strategy. The Soviets "see a symbiotic relationship between offense and defense, in which the dividing line [between the two] has become almost impossible to determine."[274] The ubiquitous dialectic that runs through Marxist ideology mates the ideas of systemic defense and systemic offense as "mutually reinforcing requirements."[275] This relationship between the offense and defense manifests itself in several ways.

First, as has already been discussed, offense can be considered a method of defense when used as the agent of

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[273] Marshal of the Soviet Union V.D. Sokolovsky, ed., Voyennaya Strategiya, Third Edition (Moscow: Voyenizdat, 1968), pp. 341-342, as cited in Deane, p. 20.

[274] Deane, p. 21.

[275] Deane and Kass, p. 104.

preemptive strategies. Second, defense can contribute to offense when it defends or protects offensive weapons. Third, offensive and defensive weapons, when and to the extent they can be distinguished from each other, "develop by permanent dialectical interaction, so that improvements in one require and/or lead to improvements in the other."[276]

This third manifestation of the offense/defense relationship is perhaps the most important to this paper. General Talensky stressed the dialectic involved in weapons development. "The long development of the means of warfare has revealed one characteristic law: there is a kind of struggle between the means of attack and the means of defense," he said. "Sooner or later, every new means of attack leads to the emergence of a means of defense."[277] This interaction, permanent and historically validated, includes competition between the offense and defense for dominance. The result of this competition, for the Soviets, is the simultaneous pursuit of offensive and defensive improvements in order to deny an opponent even a temporary strategic advantage in one direction or the other.[278] While offensive weapons are being developed in the Soviet Union, measures to defend against similar threats from potential aggressors are

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[276] Deane, p. 21.

[277] Talensky, in Brzezinski, p. 211.

[278] Deane and Kass, p. 107.

concurrently being investigated. For example, as ballistic missile submarines became ever quieter, methods of non-acoustic detection of those submarines were explored. Perhaps this could best be described as the synchronous, intentional evolution of both measures and countermeasures.

To sum up the relationship between offense and defense, in the words of a Soviet military spokesman, "Offense and defense constitute a dialectical unity of opposites, which simultaneously both exclude and assume one another. They not only are interconnected, but also mutually penetrate one another and cannot exist separately. When an army attacks, it at the same time and in some measure also defends."[279]

F. SOVIET MILITARY GOALS

The ultimate Soviet goal in war is nothing short of victory, which can be defined for the Soviets as the survival of the communist system and the crushing, decisive defeat of the opponent as a political entity.[280] Such a goal entails not only destruction of the enemy's capability and will to fight, but also maintenance of Communist Party control over the Soviet state and its forces, preservation of a basis for

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[279] Colonel I.A. Grudinin, Doctor of Philosophical Science, Dialektika i sovremennoye voyennoye delo (Moscow: Voyenizdat, 1971), p. 57, as cited in Deane, p. 21.

[280] Deane and Kass, p. 104.

military and economic reconstitution, and domination of the postwar era.[281]

Forces to destroy the enemy would consist of offensive components of the Soviet military capabilities, but survival, maintenance of control, and preservation require forces capable of protecting the Soviet Union. These forces for preservation are comprised of strategic defensive and civil defense forces, both of which are deemed essential to the effort.[282] American strategic theories, which place emphasis on the offensive to the virtual exclusion of the defensive, are criticized as "one-sided" by the Soviets, who focus upon the "balanced and harmonious development of all of their military forces," since victory is possible only through the combined efforts of all forces.[283]

"Offense is predicated on a defense of the homeland" or rear,[284] and strategic defensive operations are designed to defeat enemy air and missile attacks and to ensure stability

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[281] Stevens, in Carter and Schwartz, p. 186.

[282] Mose L. Harvey, in the Foreword to Deane, p. iii.

[283] M.M. Kir'yan, Problemy voyennoy teorii v sovetskikh nauchno-spravochnykh izdaniyakh (Problems of Military Theory in Soviet Scientific-Reference Books) (Moscow: "Nauka," 1985), p. 66, as cited in John G. Hines, Phillip A. Petersen and Notra Trulock III, "Soviet Military Theory from 1945-2000: Implications for NATO," The Washington Quarterly, Fall, 1986, Vol. 9, No. 4, p. 118.

[284] William E. Odom, "Soviet Military Doctrine," Foreign Affairs, Vol. 67, No. 2, Winter 1988/89, p. 124.

of the national war management system.[285] The Soviets have no faith in existential deterrence; the credibility of their deterrent is based on the ability of their armed forces to actually carry out the warfighting (and winning) doctrine of the Soviet Union.[286]

Defense of the rear is one of a "unique Soviet triad of capabilities" (which includes seizure of contiguous land theaters and projection of war into the noncontiguous theaters that may affect the campaigns in Europe).[287] In order to defend the rear, the Soviets have acquired a spectrum of defensive capabilities that dwarfs the efforts of all other.

G. COMMITMENT TO STRATEGIC DEFENSES

"It speaks volumes," says Robert Gates, Deputy Director of the Central Intelligence Agency, "that in a relationship in which for twenty or more years strategic stability presumably has been based on mutual vulnerability, the Soviet Union has been working to eliminate its own vulnerability and consolidate a unilateral strategic advantage...[I]t is our judgment that over the past ten years the Soviet Union has

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[285] U.S. Department of Defense, Soviet Military Power: An Assessment of the Threat 1988, p. 17.

[286] Harvey, in the Foreword to Deane, p. iii.

[287] Odom, p. 124.

spent nearly $150 billion on strategic defense, or almost fifteen times what the U.S. has spent."[288]

Although this statement speaks volumes about the lack of a U.S. commitment to strategic defense, its point is to emphasize the Soviet Union's continued dedication to defending itself. While the United States greatly decreased its efforts in strategic defense about twenty years ago, the Soviets maintained their resolute endeavors to build and improve their defenses.[289] The Soviets, in fact, spend as about as much on strategic defense as they do on strategic offensive forces; as a result, Soviet passive defenses of both civilian and military targets and strategic air defenses dwarf those of the United States, and the USSR maintains the world's only operational antiballistic-missile capability.[290]

As far as the Soviet Union is concerned, only U.S. strategic defenses (and U.S. military capabilities generally) are "destabilizing to the international balance and world peace."[291] The continuous Soviet buildup of its nuclear forces

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[288] Robert M. Gates, "The Soviets and SDI," an address to the World Affairs Council of Northern California (Bay Area International Forum), 25 November 1986, manuscript, p. 3, as cited in Richard B. Foster, "The Necessity for Strategic Defenses," Comparative Strategy, Vol. 6, No. 2, 1987, p. 135.

[289] Joseph Churba, Soviet Breakout (Washington, DC: Pergamon-Brassey's, 1988), p. 53.

[290] U.S. Department of Defense, Soviet Military Power: An Assessment of the Threat 1988, p. 102.

[291] Deane, p. 108.

is "all the more ominous" when viewed in conjunction with such efforts as their increases in air defenses, modernization of the Moscow ABM system with the deployment of what amounts to a new system, steady expansion of the nationwide network of over 1500 buried command bunkers, and military writings reflecting a belief that the Soviets could prevail in a nuclear war.[292] According to the fourth annual report on the Soviet economy released recently by the Joint Economic Committee of Congress, the Central Intelligence Agency and the Defense Intelligence Agency, despite Gorbachev's pledges, there is no evidence of a slackening in Soviet military spending;[293] in fact, Soviet defense spending has risen, not diminished, under Gorbachev.[294] But figures on defense spending alone cannot fully convey the magnitude of the Soviet strategic defensive program.

H. DEFENSIVE PREDISPOSITION

In the 1960s, U.S. theorists believed that Soviet doctrine, influenced by what was perceived as the "logic of war" in the nuclear age, would eventually parallel that of the West, and that doctrines recognizing mutual self-interest

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[292] U.S. Department of Defense, Annual Report to the Congress FY 1989, p. 51-52.

[293] Mark Thompson, "Gorbachev Shifts Gears on Economic Plans," San Jose Mercury News, 23 April 1989, p. 4A.

[294] U.S. Department of Defense, Soviet Military Power: An Assessment of the Threat 1988, p. 13.

would emerge. However, the premises of Soviet military science and doctrine have resulted in fundamental differences.[306] Specifically, while the U.S. has found strategic defenses to be of questionable value, the Soviet Union has, under basically the same circumstances, continually and enthusiastically developed and maintained various large-scale defensive measures.[307]

The Soviets, convinced that mutual destruction strategies were nothing more than a suicide pact,[308] strived to lessen their vulnerability to nuclear weapons through homeland defenses. Taught by both World Wars that "preparation of the rear" is a priority goal, the Soviets believed that unless the rear can be defended and its resources mobilized, chances for success in a war were minimal.[309] By developing defenses, the Soviets reasoned, they might be able to create a situation in which mutual destruction is not the probable outcome.[310]

While "the Soviets mark the necessity of creating a `reliable defense,' sufficient for `ensuring the stability of the operation of the whole national economy and reliably defending the population throughout the entire territory of

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[306] Odom, p. 121.

[307] Stevens, "Ballistic Missile Defense in the Soviet Union," p. 313.

[308] Deane and Kass, p. 104.

[309] Odom, p. 121.

[310] Deane and Kass, p. 105.

the country,'"[311] a strategy based on defense alone to the exclusion of offensive forces is unacceptable to the Soviet Union. Relying upon defenses to ensure Soviet survivability would imply that the Soviets are willing to "accept whatever level of destruction the opponent can inflict," and further, that the Soviet Union has foregone its active role in changing the correlation of forces.[312]

Defenses serve additional, important political purposes to the Soviet Union. Doctrines of mutual vulnerability which, in effect, leave the fate of the state in the hands of its opponents, are perceived to be contrary to the internal political well-being of the Soviet state,[313] since the leadership views its ability to assume a role as the nation's protector as a major factor in assuring the loyalty of the masses.[314] The Soviet Union also uses its defenses as "a basis for enhancing international stature,"[315] through projection of the message that the Soviet leadership is "seriously committed to its competitive struggle with the West, even if this entails the possibility of military clash. Forfeiting defense

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[311] Marshal of the Soviet Union A. Grechko, Vooruzhennyye Sily Sovetskogo gosudarstra, Second Edition (Moscow: Voyenizdat, 1975), p. 115, as cited in Deane, p. 20

[312] Deane and Kass, p. 104.

[313] Stevens, in Carter and Schwartz, p. 185.

[314] Deane and Kass, p. 104.

[315] Stevens, "Ballistic Missile Defense in the Soviet Union," p. 313.

would send the message that Soviet behavior is open to manipulation and depends on the goodwill of the Soviet Union's enemies,"[316] as General Talensky stated in 1965. Such a weakness would undoubtedly be exploited by the capitalist states who, the Soviet Union believes, seek the demise of communism.

Soviet leaders are preparing their military forces not merely to deter, but also for the possibility of actually fighting a war. Strategic defenses, which they feel would enable them to protect the leadership as well as to neutralize the ability of an opponent's nuclear forces to prevail,[317] are a key, integrated component of their military strategy.[318] Rooted in the costs of inadequate preparation and the consequent inability to prevent the destruction caused by German air raids on Moscow and Leningrad during World War II,[319] the Soviet Union's compulsion to defend itself was further justified by the U.S. monopoly on nuclear weapons during the initial postwar years. Even after the Soviets developed their own nuclear arsenal, the lack of adequate means of delivery mandated "creation of an extensive strategic

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[316] Deane and Kass, p. 104.

[317] Churba, p. 53.

[318] U.S. Department of Defense, Soviet Military Power: An Assessment of the Threat 1988, p.46.

[319] Stevens, "Ballistic Missile Defense in the Soviet Union," p. 313.

defense, lest the inability to survive in war render its offensive strategy politically useless and militarily senseless."[320] Once the Soviets acquired an intercontinental delivery capability, the role of strategic defenses was not diminished, even though these defenses would now have to deal with "merely" a retaliatory attack, and not a full-scale first strike.

During the postwar era, the Soviets realized that, as might be expected in the offense/defense dialectic, the development of strategic defensive technology lagged behind that of offensive technology. This fact did not diminish Soviet pursuit of defensive capabilities, which were allowed to flourish while the West was preoccupied with the Soviet Union's offensive threat and consequently paying relatively little attention to Soviet defense efforts. Although the Soviets found that strategic defense did not evolve equally in its three elements (civil, antiaircraft, and antimissile), each type of defense had its merits and was therefore worthy of investigation, development, and establishment.[321]

Currently, strategic defenses play a role which appears nearly to equal to that of offensive forces in Soviet strategy. Strategic defenses enhance the credibility of Soviet offensive forces insofar as they have the potential to

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[320] Deane and Kass, p. 106.

[321] Deane and Kass, pp. 106-107.

intercept and destroy U.S. retaliatory weapons before they reach their targets;[322] likewise, even passive Soviet defenses (such as hardening and mobility), by posing challenges to U.S. target acquisition and damage-inflicting capabilities,[323] can reduce the credibility of the U.S. deterrent.

It is unlikely that the Soviet Union will give up its quest for ever more effective defenses. Soviet dedication to strategic defense appears to be open-ended; since absolute systems for defense are "impossible in Soviet military-scientific theory, the strategic defensive buildup must be unending. The only limitation acknowledged is the temporary obstacle of technical feasibility,"[324] an obstacle which the Soviets believe can eventually be overcome. If, in fact, the Soviet Union is "nearing the point at which future expansion of its strategic offensive nuclear arsenal would have little or no payoff for its warfighting, damage-limiting strategy, then the potential for...returns to improvements in strategic defenses are enormous."[325] After all, there is probably a finite limit to the number of targets that the Soviets would

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[322] U.S. Department of Defense, Soviet Military Power: An Assessment of the Threat 1988, p. 46.

[323] Yost, Soviet Ballistic Missile Defense and the Western Alliance, p. 269.

[324] Deane, p. 107.

[325] William T. Lee and Richard F. Starr, Soviet Military Policy Since World War II (Stanford, CA: Hoover Institution Press, 1986), p. 123.

find militarily consequential, and a concurrent limit to what the Soviets can successfully target, given the current state of antisubmarine warfare capabilities. In a situation where political considerations, resources, utility, and technology may proscribe further offensive efforts, attention might reasonably be redirected to defenses, particularly when the perception of a threat continues to exist. As one Soviet military writer explains, "If potential opponents possess weapons of mutual destruction, decisive advantage goes to that side which first manages to create a defense [against those weapons]."[326]

I. THE INCEPTION OF STRATEGIC DEFENSE IN THE SOVIET UNION

The Soviet Union has devoted an impressive amount of time in its seventy years of existence to development of its strategic defensive concept and infrastructure. As early as the mid-1920s, a vocal minority of Soviet military strategists, including Leon Trotsky, advocated a defensive strategy. Trotsky, whose reasoning was grounded mainly in economic considerations, proposed that the standing Red Army be divided into numerous labor armies. These armies, centered around factories and farms, would be dispersed throughout the Soviet Union; since the means of transportation necessary to

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[326] Colonel V.M. Bondarenko, Sovremennaya nauka i razvitiye voyennogo dela (Voyenno - sotsiolologicheskiye aspekty problemy) (Moscow: Voyenizdat, 1976), p. 132, as cited in Deane, p. 22.

mass these armies for an external attack was nonexistent at the time, their purpose would be to provide internal defense.

Other contemporary Soviet strategists, arguing on military grounds, proposed defensive strategies in response to the lessons they felt had been learned in World War I. They believed that weapons technology had thwarted the offensive strategy of annihilation and thereby proven the superiority of defensive strategies of attrition.

Although these supporters of defensive strategies were never able to consolidate a majority, the Soviets were forced to depend on a strong defense while they lacked offensive power during the interwar period. Soviet air defenses and the Soviet civil defense program date from the mid-1920s; not even the purges of the late 1930s decreased emphasis on the development of these efforts.[327] Following World War II, the Soviet leadership committed itself to ensuring that the homeland could be protected from future ravages similar to those it had suffered at the hands of the Nazi armies. Two primary factors contributed to the strength of this commitment. First, there were the "perceptions of Soviet unpreparedness" that had arisen at the outset of the war, when the German armies were able to push across the country to Moscow itself.[328] Second, there was the military situation of

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[327] Deane and Kass, pp. 105-106.

[328] Stevens, in Carter and Schwartz, p. 189.

the era: the Soviets lacked not only nuclear weapons, but also the necessary delivery vehicles, while long-range American bombers could directly threaten Soviet territory.[329] The Soviet Union has since steadfastly adhered to the dictates of Lenin, who insisted that "the primary producer of all mankind is the laboring man, the worker. If he survives, we save everything...but if he dies, so does the State."[330]

Particularly since the advent of the nuclear age, the Soviets have placed great emphasis on the importance of limiting the amount of damage the Soviet Union would suffer in the event of another global war.[331] The Soviet General Staff elevated defense of the rear to its first priority in the late 1950s,[320] with the result that, even before the Soviets had fielded intercontinental offensive forces, they had deployed an "impressive and comprehensive strategic defense," composed of antimissile defense, antiaircraft defense, and a nationwide civil defense program.[321]

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[329] Hans Rhle, "Gorbachev's Star Wars," in Brzezinski, p. 239.

[330] V.I. Lenin, Complete Collected Works, 5th Edition, Vol. 38 (Moscow: The Political Literature Publishing House, 1958), p. 359, cited in John M. Collins, The U.S.-Soviet Military Balance: Concepts and Capabilities 1960-1980, p. 158.

[331] U.S. Department of Defense, Soviet Military Power: An Assessment of the Threat 1988, p. 46.

[320] Odom, p. 123.

[321] Deane and Kass, p. 106.

Since World War II, the Soviets have sustained their air defense efforts at a relatively high level, perhaps in part because of the perceived threat of U.S. and other potentially hostile air forces that ring the Soviet Union.[322] As a Soviet defense ministry official contends, the Soviet Union is "compelled to deploy a ramified nationwide air defense system because the USA has surrounded the Soviet Union and other countries of the socialist community with an extensive network of military bases, at which it at all times maintains large ground, air, and naval forces."[323] While the West dismissed the utility of air defenses after SALT I limited ballistic missile defenses, Soviet leaders "continue to give air defense high praise...[they] seem to address the issue of air defense as if the ABM Treaty did not exist."[324]

Although the Soviets contend that their air defense system "is intended to intercept only manned and unmanned aircraft...[in defense of] vital administrative and industrial centers and important military facilities,"[325] the National Air Defense Troops are also tasked with antimissile and antispace missions: to destroy "all targets without

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[322] Yost, Soviet Ballistic Missile Defense and the Western Alliance, p. 75.

[323] Surikov, p. 34.

[324] Deane, pp. 77, 84.

[325] Surikov, p. 34.

exception."[326] Indeed, the Soviet Union's air defenses are considered to be the world's most sophisticated and comprehensive.[327]

J. NATIONAL AIR DEFENSE TROOPS

The National Air Defense Forces of the Soviet Union are the successor of Soviet local antiaircraft defense forces. These forces were first organized on a nationwide basis in 1932, when they were placed under control of the NKVD, the People's Commissariat of Internal Affairs.[328] While about 75 per cent of the Soviet air defense effort during most of World War II consisted of point defense of individual political and economic centers,[329] since then these forces have greatly expanded their coverage and assumed responsibility for the development, acquisition, and operation of all Soviet antiaircraft, antiballistic missile, and antisatellite weapons systems.[330]

Although strategic and tactical air defense functions were officially separated in 1948,[331] the same year that the

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[326] Deane, p. 77.

[327] Collins, p. 55.

[328] Scott and Scott, p. 99.

[329] Deane, p. 23.

[330] Stevens, "Ballistic Missile Defense in the Soviet Union," p. 314.

[331] John M. Collins, US-Soviet Military Balance 1980-1985, p. 55.

National Air Defense Forces were raised to the level of a main branch of the Soviet armed forces,[332] the two elements recently were again combined in a single infrastructure. Western experts speculate that this aggregation greatly increases Soviet air defense capabilities. The combination results in a larger, more flexible, fully integrated force which shares a common doctrine, training procedures, and research and development costs under a single control structure to provide multialtitude air defense coverage much more efficiently.[333]

One of the eleven Deputy Ministers of Defense,[334] the Commander-in-Chief of the National Air Defense Forces is responsible for two major military districts: Moscow, the seat of the Communist Party power structure, and Baku, where much of the Soviet Union's petroleum production assets are located. There are also fourteen smaller air defense regions, eight within the Soviet Union and six in Warsaw Pact nations, under control of the National Air Defense Forces Commander-in-Chief.[335] The Air Defense Forces, which are also tasked with providing warning to civil defense units, are further

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[332] Johan J. Holst, "Missile Defense, the Soviet Union, and the Arms Race," in Holst and Schneider, p. 147.

[333] Collins, The U.S.-Soviet Military Balance 1980-1985, p. 55.

[334] Department of Defense, Soviet Military Power: An Assessment of the Threat 1988, p. 13.

[335] Deane, p. 95; and Collins, The U.S.-Soviet Military Balance: Concepts and Capabilities 1960-1980, p. 73.

divided into thousands of detachments, some of them very small.[336]

Overall, the Troops of National Air Defense rank third in prominence within the Soviet military, behind the Strategic Rocket Forces and the Ground Forces,[337] although in terms of manpower, it is the second-largest service branch,[338] with about half a million members[339] - the same number which was assigned to this service twenty years ago.[340] Unlike the other service branches, however, the National Air Defense Troops lack a distinctive service uniform: its pilots wear Air Force uniforms, and its missile and radiotechnical troops the uniforms of the Ground Forces.[341]

A strong artillery tradition, due in part to the fact that many early National Air Defense personnel came from artillery forces, probably accounts for early air defense emphasis on surface-to-air missiles (SAMs).[342] The Soviets conducted highly successful tests of the first antiaircraft guided

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[336] Scott and Scott, p. 62.

[337] Department of Defense, Soviet Military Power: An Assessment of the Threat 1988, p. 46.

[338] Deane, p. 97.

[339] The Military Balance 1988-1989 (London: The International Institute for Strategic Studies, 1988), p. 35.

[340] Holst, in Holst and Schneider, p. 148.

[341] Deane, p. 97.

[342] Holst, in Holst and Schneider, p. 147.

missile system, the SA-1 Guild, in the early 1950s,[343] and by 1956, Guild deployments around Moscow were visible.[344] This system, the first widely deployed SAM system in the world, was intended to counter very large bombing raids.[345] By 1958, a second SAM, the SA-2 Guideline, destined to be widely deployed throughout the Soviet Union, was introduced; this is the missile which the Soviets used to shoot down a U.S. U-2 in 1960. The SA-2 was followed by the SA-3 Goa, first publicly shown in 1964, which provided short-range defense against low-altitude attacks. The Goa was produced in both fixed and mobile versions. Subsequent systems, the SA-4 Ganeff, SA-5 Gammon, and SA-6 Gainful, included mobile missiles which were launched from tracked vehicles.[346] Modernized versions of all of these missiles, with the exception of the SA-4 and SA-6, are still currently part of the Soviet air defense inventory, along with the newer SA-10 Grumble and the SA-12.[347]

Three currently operational SAMs, the SA-5, -10, and -12, are dual capable: they can be used in both an antiaircraft or anticruise-missile and antiballistic-missile mode. As William R. Van Cleave has said, some of the new Soviet SAMs

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[343] Surikov, p. 32.

[344] Holst, in Holst and Schneider, p. 147.

[345] Stevens, "Ballistic Missile Defense in the Soviet Union," p. 314.

[346] Holst, in Holst and Schneider, p. 147-148.

[347] The Military Balance 1988-1989, p. 35.

"have such appreciable ballistic missile defense potential as to blur the distinction between air defense and antiballistic missile defense." Van Cleave further maintains that the Soviet air defense system has had this ballistic missile defense potential for about twenty years.[348] It might be useful here to point out, however, that the Soviets do not seem to attach as much importance as the U.S. does to the distinction between antiaircraft and antiballistic missile systems. In Soviet writings, the same phrase, "zenitnykh raketnykh komplekov," is used to cover both capabilities.[349]

Today the Soviets have 8,600 SAM launchers at 1,200 sites.[350] For instance, there are more than 30 SA-10 launch sites around Moscow which are dedicated to defense of hardened national war-management facilities and other high-value military-industrial assets. These and other current SAM systems will be discussed further in the chapter on net assessment.

The "second tier" of Soviet air defense is its fighter-interceptor force. The MiG-15 Fagot, introduced shortly after the U.S. F-86 Sabre jet made its debut, was the first Soviet

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[348] Van Cleave, pp. 17 and 22.

[349] Letter from Michael J. Deane dated 19 July 1983 to an American intelligence official, recounting his conversation with a Soviet military attach, as cited in Brian D. Dailey, "Deception, Perceptions Management, and Self-Deception in Arms Control: An Examination of the ABM Treaty," in Dailey and Parker, p. 257.

[350] The Military Balance 1988-1989, p. 35.

jet fighter to enter service in quantity; it is estimated that as many as 15,000 of these aircraft were eventually produced. Other interceptors quickly followed: the MiG-17 Fresco, a subsonic day fighter in 1952; and the MiG-19 Farmer, the first supersonic fighter, in 1955. The MiG-19 had a limited all-weather capability,[351] but the first true all-weather fighter, the subsonic Yak-25 Flashlight, was also introduced in 1955.[352] By this time, about 4,000 jet interceptors were committed to Soviet air defense. Subsequent fighters improved on these capabilities. The MiG-21 Fishbed, a supersonic aircraft with limited all-weather capability, and the Su-9 Fishpot, a supersonic all-weather fighter, both entered service in 1959; another supersonic all-weather aircraft, the Yak-28 Firebar, became operational in the early 1960s.[353]

Although the Yak-28 is still in service, it and other fighter-interceptor aircraft introduced in the 1960s (the Su-15 Flagon and the Tu-128 Fiddler) comprise less than a third of the current Soviet inventory of strategic air defense aircraft. The largest contingent of the Soviet air defense force consists of the variable-geometry-wing MiG-23 Flogger, which is equipped with look-down radar for detecting cruise missiles. A substantial number of MiG-25 Foxbat aircraft are

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[351] Holst, in Holst and Schneider, p. 146.

[352] Deane, p. 24.

[353] Holst, in Holst and Schneider, p. 146.

also dedicated to air defense; the remainder of the Soviet interceptor force is even more advanced: the Su-27 Flanker and MiG-31 Foxhound both have a true look-down/shoot-down capability which enables them not only to see but also intercept cruise missiles.[354] The point is that the Soviet Union is constantly improving its ability to intercept the air-breathing threat to its territory; although advances may be incremental, they are steady and continuing.

A total of approximately 2300 fighter-interceptor aircraft are allocated to the National Air Defense Forces.[355] As with SAM systems, currently operational Soviet fighter-interceptor aircraft will be covered more fully in the chapter on net assessment.

K. BALLISTIC MISSILE DEFENSE

Although the exact year the Soviets initiated research on ballistic missile defense is unknown, Western experts agree that circumstantial evidence indicates it was probably sometime in the late 1940s.[356] The Soviets have admitted that they engaged in antiballistic missile defense research, development, and experiments "after the Great Patriotic

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[354] Van Cleave, pp. 23-24; and The Military Balance 1988-1989, p. 35.

[355] The Military Balance 1988-1989 (International Institute for Strategic Studies), p. 35.

[356] Yost, Soviet Ballistic Missile Defense and the Western Alliance, footnote 19, p. 316.

War,"[357] but officially expressed interest in ballistic missile defense systems dates only to the mid-1950s, when Marshall Malinovsky emphasized the need to devote greater attention "to the problems of air defense and antimissile defense."[358] These programs paralleled Soviet development of long-range offensive ballistic missiles, undoubtedly in accordance with their dialectic predeliction to develop simultaneously both "measures" and countermeasures.[60]

The Soviet interest in defensive systems was paraded as evidence of the peace-loving nature of the Soviet state. "It is obvious that the creation of an effective anti-missile defense merely serves to build up the security of the peaceable, non-aggressive state," noted General Talensky.[360] The Soviet Union insisted that it was constantly threatened by aggressive capitalist nations; it needed defenses as part of its plan to ensure its survival. Ballistic missile defenses were not intended as a total defense in themselves, but as another means to limit damage in "circumstances that virtually deny the possibility of surviving unscathed. What might appear useless to the U.S., with its much more demanding

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[357] Surikov, p. 21.

[358] Holst, in Holst and Schneider, p. 150.

[60] Honor M. Catudal, Soviet Nuclear Strategy from Stalin to Gorbachev (Atlantic Highlands, NJ: Humanities Press International, Inc., 1989), p. 190.

[360] Talensky, in Brzezinski, p. 215.

perceptions of what ballistic missile defense must provide, might have incremental value in Soviet military eyes."[361]

Furthermore, defenses served to legitimize the integrity of the Soviet state. "The advantage of anti-missile systems in the political and international law context," said Talensky, "is that their use is caused by an act of aggression, and they will simply not work unless an aggressor's rocket makes its appearance in flight over a given area. There will be no difficulty at all in deciding who is the aggressor and who the attacked."[362]

In October, 1961, at the Twenty-Second Party Congress, Marshall Malinovsky made the initial specific affirmation of Soviet success in ballistic missile defenses. "The problem of destroying ballistic missiles in flight," he said, "has been successfully solved." After his announcement, public references to Soviet research advances proliferated, and the offense-defense relationship was continually reiterated.[363]

As rhetoric emerged, so did physical evidence of Soviet efforts, which developed along two different lines. The first deployment venture, the Griffon-missile system near Leningrad, exhibited an air-defense approach to ballistic missile defense. Construction of this system commenced in 1961, but

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[361] Stevens, in Carter and Schwartz, p. 188.

[362] Talensky, in Brzezinski, p. 214.

[363] Catudal, p. 191.

whether or not it was actually BMD-capable is still unknown.[364] The Griffon missile, the first alleged BMD missile to be publicly displayed, was included in the November Day parade in 1963. This two-stage missile had an altitude range of about 25 to 30 miles, a slant range of about 100 miles, and an estimated speed of three to five times the speed of sound. It could carry either a conventional or nuclear warhead.[365] Although the Soviets were claiming a lead in BMD development at the time (and, incidentally, stressing that BMD was "exceptionally expensive"),[366] the Griffon system had "considerable shortcomings" and, in fact, appeared to be inferior to the Nike-Zeus system concurrently under development in the U.S. The Soviets evidently reached the same conclusion, since deployment was halted in 1963, and the system subsequently dismantled. Shortly after Griffon was removed, a second system was erected in the same region. Although it exhibited characteristics typical of BMD systems,

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[364] Stevens, "Ballistic Missile Defense in the Soviet Union," p. 314; and Stevens, "The Soviet BMD Program," in Carter and Schwartz, p. 195.

[365] Catudal, p. 191; Holst, in Holst and Schneider, pp. 150-151.

[366] Catudal, p. 191.

by the late 1960s Western experts had decided that it was another air defense system.[367]

In October, 1962, construction which demonstrated the second line of Soviet BMD development began. This system, which circled Moscow at a distance of about 50 miles from the center of the city, was obviously intended to provide defense against ballistic missiles. Although six or eight complexes, each with sixteen launching points, were started, only four were eventually completed, but this was enough to prove that the Soviet Union took BMD seriously.[368]

At the time, the Soviets were advocating what came to be known as the Gromyko plan. This plan called for the reduction (to very low levels) of offensive missiles, which would be protected by a BMD shield that would also shelter population and forces.[369] The Soviets considered mutual vulnerability of the superpowers to be not only undesirable, but also destabilizing, and factors which detracted from stability could, according to this view, lead to international crises. Strongly committed to a combination of both offensive forces and an effective BMD system as a means to "substantially

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[367] Holst, in Holst and Schneider, p. 151; and Rhle, in Brzezinski, p. 241.

[368] Rhle, in Brzezinski, p. 241-242; Stevens, "Ballistic Missile Defense in the Soviet Union," p. 314; and Stevens, in Carter and Schwartz, p. 194.

[369] Yost, Soviet Ballistic Missile Defense and the Western Alliance, p. 230.

increase the stability of mutual deterrence," the Soviets put no faith in theories that forced them to rely on the kindly intentions of the U.S. and other Western nuclear powers. Soviet measures of self-defense might encourage adversaries to refrain from launching a nuclear attack against the Soviet Union, and provide some measure of protection if those adversaries could not be deterred.[370] As Talensky said at the time, "for a peace-loving state, anti-ballistic missile systems are only a means of strengthening its security."[371]

The Moscow BMD system was based on the long-range, exoatmospheric Galosh interceptor, which was housed in reloadable, above-ground launchers. Paraded in protective canisters in Moscow beginning in 1964, the interceptor, also designated the ABM-1B, was nuclear-armed and quite large; in fact, it was bigger than the Minuteman ICBM it was presumably intended to counter. All of the Galosh components, particularly the radars, were very large, but they lacked sophistication. This meant that, although it could provide coverage over thousands of square miles around Moscow, the system was highly vulnerable to saturation, decoys, and

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[370] Bruce Parrot, The Soviet Union and Ballistic Missile Defense (Boulder, CO: Westview Press, 1987), p. 24.

[371] Nikolai Talensky, "Anti-Missile Systems and the Problems of Disarmament," Mezhdunarodnaya zhizn'," No. 10 (October, 1964), p. 34, as cited in Deane, p. 31.

nuclear effects.[372] The purpose of the system, however, has since been described by Soviet commentators as protection of the Soviet capital "against an accidental or provocative ballistic missile attack,"[373] a mission which it might have been capable of handling.[374]

Through most of the 1960s, the Soviets made numerous public statements regarding their BMD capabilities.[375] "I used to say sometimes in my speeches that we had developed an antimissile missile that could hit a fly," Khrushchev says in his memoirs, "but of course that was just rhetoric to make our adversaries think twice."[376] During this period, as they completed their initial BMD deployments, the Soviets completely rejected increasingly frequent Western suggestions that BMD was destabilizing.[377]

Although then, as now, there were "rather large gaps" in what the West knew about "Soviet BMD programs, achievements,

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[372] Catudal, p. 191; Stevens, in Carter and Schwartz, p. 194; Holst, in Holst and Schneider, p. 151; Van Cleave, p. 20; and Rhle, in Brzezinski, p. 242.

[373] Surikov, p. 21.

[374] Stevens, "Ballistic Missile Defense in the Soviet Union," p. 314.

[375] Yost, Soviet Ballistic Missile Defense and the Western Alliance, p. 102.

[376] Nikita S. Khrushchev, Khrushchev Remembers: The Last Testament (Boston: Little, Brown, and Company, 1974), p. 533.

[377] Deane, p. 40.

technical objectives, and overall intent,"[378] most Western authorities agree that Soviet military doctrine thoroughly supported strategic defensive principles. Since that time, however, it has been "virtually impossible" to find information on Soviet BMD capabilities in Soviet sources.[379] The reasons for the sudden absence of Soviet references to their BMD programs was, of course, the Strategic Arms Limitation Talks, or SALT I.

The Soviet Union's immediate and adamant response to initial U.S. SALT proposals was that offensive, not defensive, weapons should be the focus of negotiations; indeed, a review of the period preceding the talks shows that during the 1960s, "the Soviets completely rejected the Western characterization of ABM as a destabilizing weapon." By the time the talks started, however, the negotiating positions of the two sides had reversed: the American delegation pressed for discussion of offensive weapons, while the Soviets wanted to talk about ABMs, and leave offensive weapons off the agenda.[380] The two sides eventually agreed to a limit of a single ABM deployment site, but the Soviets not only criticized the American team for concentrating on technical details and ignoring broader political issues, but also refused to discuss the technical

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[378] Stevens, in Carter and Schwartz, p. 183.

[379] Yost, Soviet Ballistic Missile Defense and the Western Alliance, p. 102, 105-6.

[380] Deane, pp. 40, 47, 49.

aspects of the limitations,[381] a fact which continues to cause various problems for the U.S.

What changed the Soviet attitudes toward ABMs? The Soviets contend the respective delegations to the talks "arrived at a common understanding of the importance of effective measures for the limitation of ABM systems as a major factor in curbing the strategic offensive arms race and lessening the danger of war."[382] At the time, this theme was reiterated continually in various public forums, but only until the U.S. ratified the treaty.[383]

These assertions may be mere rhetoric. The Soviets may have agreed to the treaty for reasons that have little to do with the arms race or strategic stability. First, and most important to the Soviets, the treaty and its associated negotiations forced U.S. recognition of Soviet power, without requiring that the Soviet Union modify its policies or accept U.S. concepts such as mutual deterrence. Consequently, the U.S., and not the Soviet Union, was forced to give up its "position of strength" policy.[384]

Second, the Soviets were having some difficulties in developing their ABM systems, and had little to lose by

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[381] Deane, pp. 50 and 55.

[382] Surikov, p. 25.

[383] Deane, p. 71.

[384] Deane, p. 69.

agreeing to the ambiguous limitations contained in the treaty.[385] Finally, the U.S. was proceeding with its Safeguard deployment at Grand Forks, and the Soviets perceived a need to restrain, if not halt entirely, U.S. advances in ABM technology. U.S. technology was already substantially better than that the Soviets possessed at the time,[386] and the terms of the treaty might help prevent U.S. acquisition of a technological lead that the Soviets might find it impossible to overcome.[387] While the U.S. viewed Soviet acceptance of the treaty as a sign that they had also accepted U.S. deterrence principles, the Soviets were buying time for their ABM research and development programs to catch up.

There is no evidence that the ABM Treaty has significantly affected these programs. In fact, both air defense and ABM research and development activities "appear to have flourished," with substantial deployments of the former,[388] and probable gains on U.S. achievements in the latter.

Although BMD is the only type of strategic defensive program currently subject to arms control restraints, public reference to Soviet efforts in this area are extremely rare. This has been attributed to two factors. First, as with many

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[385] Deane and Kass, p. 107.

[386] Stevens, "Speculations on Soviet Responses to SDI," p. 315.

[387] Dailey, in Dailey and Parker, p. 226.

[388] Catudal, p. 207.

other of their activities, the Soviets try to ensure that as much secrecy as possible surrounds their true intentions and real capabilities. Second, the Soviets realize that there is a great propaganda advantage in saying nothing about their abilities.[389] Without evidence of some kind, such as public statements, it is difficult for adversaries, such as the U.S., to prove to an audience that the Soviets actually possess defensive capabilities; those audiences might infer that the Soviets have no strategic defenses.

In reality, despite Soviet assertions that "only mutual restraint in strategic ABM systems makes it possible to advance along the path of strategic offensive arms limitation and reduction,"[390] the restraint has been unilateral, and pretty much confined to U.S. efforts. According to the U.S. Department of Defense, the current Soviet ABM program "involves a much greater investment of plant space, capital, and manpower" than that of the U.S.[391] Western observers noted that "there were increasingly frequent signs that despite the ABM Treaty, the Soviet Union was intensifying its missile defense program, concealing this merely by changes of nomenclature and organizational structure within the Soviet

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[389] Yost, Soviet Ballistic Missile Defense and the Western Alliance, p. 102.

[390] Surikov, p. 81.

[391] U.S. Department of Defense, Soviet Military Power: An Assessment of the Threat 1988, p. 59.

forces....the numerous air defense missiles deployed throughout the Soviet Union slowly but surely took on the quality of a missile defense system. New radar equipment plugged the remaining gaps."[392]

Expansion and upgrading of the Moscow ABM system began in 1978,[393] as old Galosh launchers were replaced with long-range, exoatmospheric interceptors and high-acceleration, endoatmospheric interceptors, both silo-based.[394] But this is merely one aspect of a program whose implications extend far beyond the single site described in the ABM Treaty. The Soviets contend that the "ABM defense system of Moscow is maintained in combat-ready condition with changes in its performance character permitted by the ABM Treaty."[395] Although this may be true, the Moscow ABM site is only one element of what can be described as an extensive defensive system with the potential to far exceed, both geographically and functionally, the restraints imposed by the treaty. The most compelling evidence that the Soviet Union may be preparing an ABM defense of its national territory lies in the Soviet radar and surveillance network, whose components include transportable elements such as Flat Twin and Pawn Shop

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[392] Rhle, in Brzezinski, p. 244.

[393] Churba, p. 55.

[394] Department of Defense, Soviet Military Power: An Assessment of the Threat 1988, p. 44.

[395] Surikov, p. 35.

radars, and nine large phased-array radars, including the one located at Krasnoyarsk.

Still under construction, the Krasnoyarsk radar, because of its orientation and location, clearly violates the ABM Treaty; it is the last of a series of long-range, phased-array systems that form a nearly complete ring of ballistic missile detection coverage for the Soviet landmass. These newer radars "duplicate and augment coverage provided by the older Hen House ballistic missile early warning radars, but could also provide the detailed detection and tracking data which would be required for a nationwide ABM system."[396]

The Krasnoyarsk radar aroused great concern. "Now it became clear that what many observers had until then considered to be no more than somewhat halfhearted or aimless activity on the part of the Soviets was in fact forming a definite pattern. Slowly but surely, the Soviet Union was building up a network of communications systems, mobile air- and missile-defense radar installations together with operational radar equipment, as a basis for a nationwide missile defense system capable of rapid deployment."[397] The discovery of the Krasnoyarsk radar seemed to bring Soviet efforts into focus and to force the West into the realization

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[396] Department of Defense, Soviet Military Power: An Assessment of the Threat 1988, p. 56.

[397] Rhle, in Brzezinski, p. 245

that the Soviets had not, in fact, been educated by the West in the virtues of mutual vulnerability.

"Rapid deployment" and "nationwide defense" are the potential Soviet capabilities that most disturb the West. If the Soviet Union were able to achieve a unilateral advantage in ballistic missile defense, "Western vulnerability to Soviet military power would be increased because Soviet vulnerability to retaliation would be decreased."[398] The Soviets, with active missile interceptors, radar production lines, operational experience with ABM systems and how those systems interact with strategic offensive forces, and a cadre of ABM personnel, already possess a formidable ABM infrastructure.[399] And the Soviet Union is the only country in the world that maintains such a system today.[400]

In spite of the obviously tremendous defensive effort the Soviets have been involved in for over forty years, the Soviet Union has been quite vocal in its opposition to the U.S. SDI. "No state is so strong a proponent of strategic defense in practice as the Soviet Union, yet none is more strongly opposed to SDI in public. Standing Soviet rhetoric side-by-side with their strategic defense efforts, one is led to

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[398] Yost, Soviet Ballistic Missile Defense and the Western Alliance, p. 183.

[399] Department of Defense, Soviet Military Power: An Assessment of the Threat 1988, p. 104.

[400] Van Cleave, p. 20.

conclude that the Soviets are far more interested in stigmatizing the U.S. defense effort than engaging in a reasonable and constructive dialogue on the future of the strategic relationship and the role of strategic defenses in it."[401]

Using the ABM Treaty as a basis for criticism, the Soviets criticize SDI as though it were a unilateral Western initiative. "As early as during the SALT I talks," says one Soviet expert, "the USSR and the USA arrived at a clear understanding that in the conditions of parity in strategic offensive forces the acquisition of an additional defense capability by either side would be tantamount to the acquisition by it of a preemptive nuclear strike capability."[402] The Soviets also prey on popular fears: "[W]e wanted to pinpoint SDI," Gorbachev notes, "so that the whole world could see that it is the chief obstacle in the way of nuclear disarmament."[403] The expert is more graphic: "Implementation of SDI would not only thwart the people's hopes for a secure and non-nuclear world, it would also increase the danger of a suicidal nuclear holocaust."[404]

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[401] Rowny, p. 25.

[402] Surikov, pp. 80-81.

[403] Gorbachev, p. 244.

[404] Surikov, p. 15.

Curiously, the Soviet Union also contends that it has at its disposal "all that it needs to meet the SDI challenge by developing and changing its defense potential which, even if the SDI program is fully implemented, will prevent the USA from tipping the military-strategic balance in its favor."[405] It is clear to Western experts that the Soviet Union will certainly continue to develop its ABM potential, regardless of the outcome of the U.S. SDI program.[406] "[T]he key point," according to the British Secretary of State for Defense, "is that this is not a new Soviet programme; it is not a response to the SDI - far from it, it long predates it - it is not something peripheral to the Soviet effort in defence research; it is a key component of it."[407]

L. CIVIL DEFENSE

The Soviets describe their civil defense program as a "peace-strengthening measure," but it is much more than that. The Soviets consider civil defense to be another aspect of their military strategy,[408] constituting in the Soviet view

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[405] Surikov, p. 173.

[406] Yost, Soviet Ballistic Missile Defense and the Western Alliance, p. 247.

[407] George Younger, in Great Britain, Parliament, Parliamentary Debates (House of Commons) 19 February 1986, col. 337, as cited in Yost, Soviet Ballistic Missile Defense and the Western Alliance, p. 22.

[408] Scott and Scott, p. 97.

"one more major obstacle in the way of the unleashing of a new world war by the imperialists."[409]

Initiated as early as 1920, the Soviet civil defense effort was originally developed as a response to conventional and chemical weapons. In the early 1930s, the threat of air attack and incendiary weapons kept the program alive, as did Hitler's accession to power in Germany, which prompted increased shelter construction, an expanded civil defense organization, and, in 1933, the first nationwide civil defense training program. The civil defense infrastructure developed prior to World War II became the basis for the organization that exists today throughout all levels of Soviet society.[410]

During the war, organizations and concepts already in existence were employed,[411] as the German attack on the Soviet Union triggered a general mobilization of the population. On 2 July 1941, less than two weeks after the German invasion commenced, civil defense training and participation in civil defense work became mandatory for all Soviet citizens from 16

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[409] A.S. Milovidov, Filosofkoye Naslediye V.I. Lenina i Problemy Sovremennoy Voyny, The Philosophical Heritage of V.I. Lenin and Problems of Contemporary War (Moscow: Voyenizdat, 1972), p. 68, as cited in Scott and Scott, p. 97.

[410] Leon Gour, Civil Defense in the Soviet Union (Berkeley, CA: University of California Press, 1962), pp. 2-4.

[411] Scott and Scott, p. 99.

to 60 years of age. Western experts concede that their wartime performance was "generally good."[412]

DOSAAF, the Volunteer Society for Assistance to the Army, Air Force and Navy, was formed in 1951. Described as a "defense-patriotic organization whose purpose is active cooperation for strengthening the military capability of the country and for preparing workers for the defense of the socialist fatherland,"[413] DOSAAF comprises 341,000 primary organizations.[414] Beginning in 1952, DOSAAF members were required to take a 20-hour civil defense course[415] in order to prepare them to carry out their responsibilities for warning, communications, preserving order, and safety.[416] By 1954, nuclear weapons were included in the curriculum; in 1956, bacteriological weapons were added. Since that time, Soviet civil defense efforts have been directed against the entire spectrum of modern offensive weapons.[417]

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[412] Gour, p. 6.

[413] Bol'shaya Sovetskaya Entsiklopedii, Great Soviet Encyclopedia (Moscow: Soviet Encyclopedia Publishing House, 1973), p. 465, as cited in Scott and Scott, p. 117.

[414] Yezhegodnik, 1981, Bol'shaya Sovetskaya Entsiklopedii, Yearbook, 1981, of the Great Soviet Encyclopedia (Moscow: Soviet Encyclopedia Publishing House, 1981), p. 23, as cited in Scott and Scott, p. 117.

[415] Gour, p. 7.

[416] Scott and Scott, p. 100.

[417] Gour, p. 8.

The existing structure of Soviet agencies, from the national down to the local level, was used as the basis of Soviet civil defense organization.[418] Since 1961, when responsibility for these programs was transferred from the Ministry of the Interior,[419] the Ministry of Defense has been the central headquarters and control apparatus for the civil defense network.[420] The Chief of Civil Defense, who since 1972 has also been a Deputy Minister of Defense,[421] directs all national and local, military and civilian programs.[422]

The corps of full-time civilian civil defense personnel is probably about equal in numbers to the military Civil Defense Troops. These civilians occupy posts in central and local government and industrial enterprises, and are responsible for preparing civil defense plans, such as those for evacuation and rescue, for their respective organizations; carrying out the universal training program; and recruiting, organizing, and training multitudes of part-time personnel.[423] The objective of civilian civil defense is the protection of

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[418] Scott and Scott, p. 102.

[419] Catudel, pp. 262-263.

[420] Christopher Donnelly, Red Banner (Surrey, UK: Jane's Information Group, 1988), p. 165.

[421] Scott and Scott, pp. 65 and 97.

[422] Donnelly, p. 165.

[423] Donnelly, p. 165.

the population as a whole and the economy, and post-attack recovery.[424]

Military officers and conscripts comprise the regular Civil Defense Troops, which might be considered the backbone of the Soviet civil defense effort.[425] Established sometime prior to 1965, these troops are assigned directly to military districts; contingents are stationed within cities throughout the Soviet Union.[426] Civil Defense Troops are trained in basic soldiering, the operation of engineering machinery, firefighting, traffic control, first aid, and other related subjects, and they have many responsibilities.[427]

Civil defense in the Soviet Union is a much broader undertaking than has ever been considered in the West. It includes "extensive planning for the transition of the entire State and economy to a wartime posture."[428] In terms of specific functions, this means that Soviet Civil Defense Troops are responsible for communications service; effective early warning; medical services, including anti-epidemic measures; maintaining civil order; dispersal of the essential workforce from large towns to surrounding villages;

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[424] Scott and Scott, pp. 107-108.

[425] Donnelly, p. 165.

[426] Scott and Scott, pp. 65 and 107.

[427] Donnelly, p. 165.

[428] Van Cleave, p. 31.

engineering duties, such as providing access routes, demolishing unstable buildings, clearing rubble, and building shelters; animal and plant life protection; transportation; power sources; provisions and supplies, including the creation of food and water reserves; evacuation and concealment of the essential research and development establishment; repair, maintenance, and evacuation of equipment and vehicles; and search-and-rescue operations.[429]

As might be expected, segments of Soviet society receiving civil defense protection have been prioritized. Soviet leadership receives the greatest attention, followed by military command and control, war-supporting industrial production, the essential workforce, and finally, as much of the population as possible.[430]

Through the 1950s and into the early 1960s, the Soviet civil defense program put emphasis on a shelter program similar to that being developed in the U.S. at the time. Although evacuation was later considered to be more workable,[431] open sources in the West claim that, at most, the Soviets have conducted only a single evacuation drill, and

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[429] Scott and Scott, pp. 105-106; and Donnelly, p. 165-166.

[430] Van Cleave, p. 31.

[431] Scott and Scott, p. 102.

that was of the work force of a single industry from just one city.[432]

Although some sources indicate that there is little evidence of a widespread construction program,[433] shelters were again made the dominant feature of the civil defense program in about 1975, perhaps because the subways in larger Soviet cities could serve as adequate shelter facilities for hundreds of thousands of people. Long-range plans include subways in all cities with populations of a million or more; all subways built up to now are quite deep and have massive blast doors.[434] According to former chief of Air Force intelligence Major George Keegan, Jr., analysts have determined through photointerpretation that, in 39 of the largest Soviet cities, every apartment building constructed since 1955 has a massive shelter in its basement. These shelters are connected by tunnels which contain water and electrical power conduits and hospital-type facilities. A Soviet defector has described food shelters three to four times the size of a football field, each at a minimum depth of 60 feet and stocked with oats, barley, greens, and American wheat.[435]

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[432] Catudel, p. 263.

[433] Donnelly, p. 168.

[434] Scott and Scott, p. 110.

[435] William E. Burrows, Deep Black (New York: Random House, 1986), pp. 5-6 and 8.

Worked-out mines supplement subways as population relocation facilities; they are also used as concealed storage sites for military stores, equipment, and strategic stocks reserve, and as potential locations for wartime economic activity.[436]

All factories and other establishments are required to have shelters for their personnel and an evacuation plan; essential industries must have a mobilization plan as well. Mandatory civil defense drills are included in these plans.[437] Duplication of essential industries is recommended by Soviet military planners, although observers have concluded that it is unlikely that this has been achieved except possibly in "a few, very critical areas."[438]

Fixed and mobile facilities for command of Soviet offensive forces have been also been established. At least one exurban command post is dedicated to every significant military command element; most of these are near-surface bunkers, but there is also an extensive network of deep-underground complexes for the highest civilian and military leadership: the Politburo, Central Committee, Ministry of Defense, and the KGB. These deep-underground facilities are sometimes hundreds of meters below the surface, and can

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[436] U.S. Department of Defense, Soviet Military Power: An Assessment of the Threat 1988, p. 61.

[437] Scott and Scott, pp. 110-111.

[438] Scott and Scott, pp. 111-112.

accommodate thousands of people for extended periods of time.[439] General Keegan has estimated that in the Moscow area alone there are about 75 underground command posts, each about the size of the Pentagon and covered with five hundred feet of reinforced concrete and earth fill. His analysts found similar, smaller shelters throughout the military chain of command "in every city in every military district."[440]

The U.S. Department of Defense believes that the deep underground system may enable "independent operations to be carried out from these facilities for many months. The top leadership has the option of going by secret subway lines out to Vrukovo Airfield, about 17 miles southwest of the Kremlin, and from there flying to remote facilities...which would permit the surviving leadership to reconstitute Soviet military power for ensuing military operations."[441] It is estimated that over 175,000 personnel could be accommodated in this underground system.[442]

Sovietologists Harriet and William Fast Scott note that another aspect of Soviet civil defense that deserves attention is the "moral-political preparation of the population and the

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[439] U.S. Department of Defense, Soviet Military Power: An Assessment of the Threat 1988, p. 17.

[440] Burrows, p. 7.

[441] U.S. Department of Defense, Soviet Military Power: An Assessment of the Threat 1988, p. 61.

[442] Van Cleave, p. 31.

military indoctrination of Soviet youth," which results in the publication of dozens of books and hundreds of articles on the subject every year.[443] Civil defense training for Soviet citizens is a lifetime program which begins with short courses in second and third grades, continues at Pioneer recreation camps, where most children spend about two weeks every summer, and is taught at universities, where a fifty-hour course prepares students to become civil defense instructors or DOSAAF leaders.[444] By the time they complete secondary school, students have had at least 62 classroom hours and more than 75 hours of evacuation and field exercises in civil defense.[445]

One of the desired results of the planned civil defense effort is the maintenance by the leadership of a war-preparedness attitude within the Soviet population, which results in a significant level of discipline and paramilitary habits.[446] This helps the leadership ensure continued control of the population under wartime conditions.[447]

The efficiency of the Soviet civil defense system is described as inconsistent, since the more important a town,

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[443] Scott and Scott, pp. 3 and 113.

[444] George Kolt, "The Soviet Civil Defense Program," Strategic Review, Spring, 1977, p. 55.

[445] Evans M. Harrell, "Civil Defense in Other Countries," in Dowling and Harrell, p. 109.

[446] Catudel, p. 269.

[447] Scott and Scott, p. 99.

factory or similar site is to the function of the military and the government, the greater its level of civil defense preparations.[448] However, the Committee on the Present Danger has estimated that Soviet civil defense measures would reduce the number of Soviet casualties resulting from a nuclear exchange to about one tenth those the U.S. would suffer.[449]

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[448] Donnelly, p. 166.

[449] Alerting America, p. 58.

V. THE NET ASSESSMENT

A. BACKGROUND

The strategic defensive doctrines of the Soviet Union and the United States have been examined at some length in the previous two chapters. The evident differences in these doctrines have resulted in strikingly disparate concrete manifestations of the respective doctrines, as might be expected.

Net assessments are often criticized because they are little more than bean counts. If this were to be a truly accurate, complete net assessment, it would have to include not only the doctrines described above, but also force exchange models, logistical and operational factors, warfighting objectives, and so on.[450] In an assessment of strategic defenses, an examination of the offensive forces that the defenses would be expected to counter might be especially valuable.

The object here, however, is merely to examine the strategic defenses deployed by the U.S. and the Soviet Union as a result of their distinct military doctrines. The numbers of active systems will be compared, and where appropriate,

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[450] Aaron L. Friedberg, "The Assessment of Military Power," International Security, Winter, 1987/88, Vol. 12, No. 3, p. 194.

performance characteristics will be described. Unless otherwise indicated, the information provided is from The Military Balance, published by the International Institute for Strategic Studies in London, and therefore current as of 1 June 1988.

B. SOVIET SYSTEMS

According to the U.S. Department of Defense, Soviet air defense systems are "better able today than in 1981 to degrade effectively strikes by U.S. and NATO air forces.[451] In view of the Soviet proclivity for constant, albeit incremental, upgrading of systems, it might be assumed that similar improvements, increases, and/or modernization have occurred in antiballistic missile systems and civil defense as well.

1. Antiballistic Missile Systems

There are currently 16 ABM-1 Galosh launchers deployed around Moscow. The Galosh interceptor has a slant range of 200 miles, and is armed with a three megaton nuclear warhead. This exoatmospheric interceptor is launched from a fixed site.[452] In the near future, Western specialists anticipate replacement of the ABM-1 with the ABM-X-3, perhaps as soon as this year. This system includes the SH-08 and SH-11 interceptors. The endoatmospheric SH-08 Gazelle relies on

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[451] U.S. Department of Defense, Soviet Military Power: An Assessment of the Threat 1988, p. 80.

[452] Collins, The U.S.-Soviet Military Balance 1980-1985, p. 185; and Hobbs, p. 133.

atmospheric sorting to distinguish decoys from warheads, carries a low-yield nuclear warhead and has a range of 80-300 kilometers.[453] The exoatmospheric SH-11 modified Galosh has a slant range of 150-500 kilometers, and may be able to stop and start its propulsion systems four or five times at very high altitudes, allowing the interceptor to loiter while ground radars sort out incoming warheads from decoys.[454]

2. Interceptor Aircraft

The Soviets have deployed about 2,300 fighter-interceptor aircraft. These include:[455]

* 900 MiG-23 Flogger B/G, which reach speeds of Mach 2.3, have a combat radius of 1,150 kilometers, and carry two AA-7 Apex and 4 AA-8 Aphid missiles.

* 405 MiG-25 Foxbat E, which reach speeds of Mach 2.8, have a combat radius of 1,450 kilometers, and carry four AA-6 Acrid missiles.

* 225 MiG-31 Foxhound A, which reach speeds of Mach 2.4, have a combat radius of 2,100 kilometers, and carry four AA-9 Amos missiles.

* 405 Su-15 Flagon A/D/E/F, which reach speeds of Mach 2.0, have a combat radius of 1,000 kilometers, and carry two AA-3 Anab missiles.

* 90 Su-27 Flanker, which reach speeds of Mach 2.0, have a combat radius of 1,500 kilometers, and carry six air-to-air missiles.

* 60 Yak-28P Firebar, which reach speeds of Mach 1.8, have a combat radius of 900 kilometers, and carry two AA-5 Ash missiles.

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[453] Hobbs, p. 132; and Yost, p. 35.

[454] Yost, p. 35; and Hobbs, p. 133.

[455] Collins, The U.S.-Soviet Military Balance 1980-1985, p. 187; and U.S. Department of Defense, Soviet Military Power: An Assessment of the Threat 1988, p. 59.

* 50 Tu-28 Fiddler B, which reach speeds of Mach 1.5, have a combat radius of 1,500 kilometers, and carry four AA-5 Ash missiles.

3. Surface-to-Air Missiles

About 8,600 launchers deployed at 1,200 sites. These include:[456]

* 1,620 SA-1 Guild (being replaced by SA-10); the Guild has a ceiling of 60,000 feet and can deliver either a nuclear or high explosive warhead. It operates from a fixed launch site.

* 2,500 SA-2 Guideline (being replaced by SA-10); the Guideline has a ceiling of 80,000 feet and can deliver either a nuclear or 288-pound high explosive warhead. It is launched from a fixed site.

* 1,150 SA-3 Goa (2 or 4 launcher rails; over 300 sites). The Goa has a ceiling of 40,000 feet and carries a 132-pound high-explosive warhead. It operates from a mobile site.

* 1,930 SA-5 Gammon (130 complexes); the Gammon has a ceiling of 95,000 feet and delivers either a nuclear or 132-pound warhead. Its launcher is mobile.

* 1,400 quad SA-10 Grumble, which may have potential against some types of strategic ballistic missiles.[457] The Grumble has a ceiling of 80,000 feet and can carry either a nuclear or high-explosive warhead. Its launcher is semi-mobile.

4. Antiaircraft Artillery

Soviet air defense forces also operate 11,500 antiaircraft artillery pieces.[458]

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[456] Collins, The U.S.-Soviet Military Balance 1980-1985, p. 185.

[457] U.S. Department of Defense, Joint Chiefs of Staff, United States Military Posture for FY89 (Washington, DC: U.S. Government Printing Office, 1988), p. 89.

[458] Van Cleave, p. 24.

5. Civil Defense

There are over 150,000 full-time civil defense personnel in the Soviet Union; there are over 150,000 hardened bunkers for the political leadership in the Soviet Union. Annual Soviet civil defense spending averages between $2 and $6 billion.[459]

C. U.S. SYSTEMS

1. Antiballistic Missile Systems

The U.S. has no ABM systems currently deployed.

2. Interceptor Aircraft

There are about 276 fighter-interceptor aircraft deployed for strategic defense in the United States. They are divided among three regular Air Force squadrons (two in the continental U.S. and one in Alaska) and twelve Air National Guard squadrons (eleven in the continental U.S. and one in Hawaii). The aircraft flown by these squadrons includes:[460]

* 102 F-15 Eagle, with a speed of Mach 2.5 and a range of 1,770 kilometers; equipped with eight air-to-air missiles.
* 42 F-16 Fighting Falcon, with a speed of Mach 2.0 and a combat radius of 850 nautical miles; equipped with four air-to-air missiles.

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[459] Keith B. Payne, Strategic Defense (Lanham, MD: Hamilton Press, 1986), p. 49; and Dailey, in Dailey and Parker, p. 243.

[460] Gunston and Spick, p. 122; and Collins, The U.S.-Soviet Military Balance 1980-1985, p. 187.

* 30 F-106 Delta Dart, with a speed of Mach 2.0 and a combat radius of 525 nautical miles; equipped with five air-to-air missiles.

* 126 F-4 Phantom, with a speed of Mach 1.19 and a range of 2,816 kilometers; equipped with six air-to-air missiles.

3. Surface-to-Air Missiles

There are no SAMs deployed in the United States.

4. Antiaircraft Artillery

There is no antiaircraft artillery deployed in the U.S.

5. Civil Defense

There are about 7,000 full-time civil defense personnel in the U.S., and less than one hundred hardened bunkers for political leadership. The U.S. civil defense budget is about $170 million per year, part of which is dedicated to natural disaster preparedness.[461]

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[461] Bethell, p. 11.

VI. SUMMARY AND CONCLUSIONS

A. THE COMPARISON

The strategic defensive doctrines of the Soviet Union and the United States have evolved in different directions, most noticeably since the end of the second World War and the conception of nuclear weapons. The Soviets have currently deployed a range of antiaircraft defenses and civil defense measures, and are in the process of bringing their antiballistic missile defense up to treaty-permitted limits. The strategic defenses of the U.S., on the other hand, presently consist of only that number of fighter-interceptor squadrons considered necessary for peacetime surveillance and sovereignty of U.S. airspace.

The reasons for this great disparity in deployed strategic defenses are varied. The history and geographic location of the two nations, their concepts of deterrence, warfighting doctrines and goals, national policies and political systems have all impacted upon their decisions to maintain or forego defensive forces. While U.S. efforts to develop civil defenses have been sporadic at best, the Soviet Union has constantly strived to improve and increase its extensive civil defenses. While the U.S. has decided that antiballistic missile defenses are either infeasible, not cost effective or too imperfect to deploy, the Soviet Union has steadfastly

endeavored to upgrade its ABM system. And while the U.S. pronounced antiaircraft defenses useless without accompanying ABMs, the Soviet Union has developed the world's densest air defenses.

U.S. logic erroneously predicted that the Soviets would see the wisdom of mutual theories of deterrence, and follow the U.S. lead to eliminate or at least substantially decrease strategic defenses. Minus ABM defenses, there would supposedly be no incentive for a buildup of offensive forces, and arms races could be avoided. The assertion that "in order to deter, we cannot defend" has come to dominate accepted strategic logic in the U.S., in spite of overwhelming evidence that the Soviets were not subscribing to the logic.[462] As the U.S. strategic nuclear arsenal has decreased in numbers and megatonnage over the last twenty-odd year, the Soviets achieved parity, and then superiority despite, and sometimes because of, arms control treaties.

The Soviets have steadfastly pursued a course of action which has resulted in a formidable combination of both offensive and defensive forces. With the advent of the Strategic Defense Initiative over six years ago, it appeared as though the U.S. was attempting to add the defensive element to its deterrent strategy. The president strongly supported strategic defense, as did the American public. But the SDI,

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[462] Van Cleave, p. 10.

after an investment of billions of dollars and hours, remains a research program; the deployment decision for U.S. strategic defenses has been deferred into the next decade.

B. THE CASE AGAINST STRATEGIC DEFENSE

Strategic defenses have been criticized for several reasons. They are said to provoke offsetting countermeasures, including expanded offenses. They can alarm a nation's adversaries by giving them the impression that that nation is aspiring to a first-strike capability, thereby provoking the adversary to preempt. In the case of ABMs, strategic defenses may violate existing treaties, and consequently undermine the arms control process.[463] If unilaterally deployed, strategic defenses frustrate mutual deterrence theories.[464] For the U.S., strategic defenses can have particularly adverse implications. Most Western Europeans have come to view "mutual vulnerability as the soundest basis for long term East-West political accommodation and cooperation. Without the ABM Treaty, it is feared, an offense-defense arms race would endanger prospects for arms control and dtente and increase the risks of war."[465]

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[463] McFarlane, p. 38,

[464] Stevens, in Carter and Schwartz, p. 182.

[465] David S. Yost, "The Reykjavik Summit and European Security," SAIS Review, Summer/Fall, 1987, pp. 10-11.

Other arguments against strategic defense are based on technology: because leakproof defenses are not yet possible, a nation's attempt to defend itself is futile. As long as defenses cannot guarantee perfect security, even discussing them is wrong, since such discussions misrepresent the character of the threat, and lull people into a false sense of security that belies the "inevitable catastrophe" of mass destruction.[466]

C. SUPPORT FOR STRATEGIC DEFENSE

The case for strategic defense is equally strong. Strategic defenses may remove or at least reduce the threat of nuclear destruction, and facilitate mutual deterrence based on survival rather than annihilation. According to the argument, this would promote stability because there would be little to gain from a nuclear exchange, instead of everything to lose.[467]

Defenses also reinforce deterrence by causing uncertainty for attack planners, thereby diminishing their confidence in the ability of their forces to execute an effective attack. The U.S. Department of Defense notes that defenses need not be leakproof to achieve this objective.[468] If deterrence

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[466] Rathjens, in Haley and Merrit, p. 56; and McFarlane, p. 39.

[467] Hobbs, p. 17.

[468] U.S. Department Defense, Annual Report to the Congress Fiscal Year 1989, p. 49

should fail, strategic defenses can protect population and other valuable assets; this protection can extend to allies as well.[469]

D. IMPLICATIONS OF STRATEGIC DEFENSE

"[Strategic] defenses, no matter how great their promise, will not constitute the last move in high-tech arms competition, and strategic defensive technology will not solve the fundamental problems of political rivalry," two U.S. strategists contend.[470] The ability of hardware alone - whether offensive or defensive - to solve fundamental differences in the objectives pursued by the U.S. and the Soviet Union is questionable. What strategic defenses can do is buy time for political issues to be resolved, for arms reduction efforts to be effected, and for a possible shift to deterrence based, at least in part, on survivability rather than destruction.

There are few advocates for strategies based on defense alone. The Soviets have chosen to couple their defenses with strong offensive forces, but the U.S. has not yet added a defensive element to its strategic doctrine, in spite of support for defenses from various quarters. As William Odom suggests, "[T]he lack of consensus for the Strategic Defense

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[469] Yost, Soviet Ballistic Missile Defense and the Western Alliance, p. 280; and U.S. Department of Defense, Annual Report to the Congress Fiscal Year 1989, p. 49.

[470] Payne and Gray, p. 842.

Initiative and civil defense indicates a limit to which the West agrees with the Soviet Union on this issue."[471]

The absence of strategic defenses, particularly when an adversary has deployed such defenses, could result in "self-deterrence in a crisis."[472] Without strategic defenses, U.S. plans to inflict nuclear destruction through retaliation against the Soviet Union become suspect, as do U.S promises to provide a nuclear umbrella for allies.[473] Would the U.S. risk inviting a Soviet attack against its cities, its people, its national territory by responding to a Soviet an attack on an ally with an attack on the Soviet Union? If the U.S. were able to defend itself against a Soviet attack, its umbrella would acquire an additional degree of credibility: there is no doubt that a nation with strategic defenses would use them.

E. CONCLUSIONS

The increases in Soviet offensive capabilities are especially sobering when coupled with the strategic defenses the Soviet Union has already deployed, and the potential for a nationwide defensive system the Soviets have cultivated. The Soviets are incrementally removing from risk the assets--offensive forces, political and military leadership, economic

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[471] Odom, p. 121.

[472] Yost, Soviet Ballistic Missile Defense and the Western Alliance, p. 280.

[473] Collins, The U.S.-Soviet Military Balance 1980-1985, p. 4.

resources, essential workforce--they value most, thereby weakening the credibility of U.S. deterrent forces. The Soviets have managed to shift the correlation of forces increasingly in their favor, while the U.S. permitted first its strategic superiority and then its position of parity to erode. If the Soviet Union intends to pursue a goal of world domination, such asymmetry could encourage the Soviets to use their advantages to consolidate concrete gains. The U.S. might be able to retaliate pursuant to a Soviet first strike, but how effective would those retaliatory forces remaining be against Soviet defense?

A double standard with regard to strategic defenses has also developed. While the Soviet deployment of considerable defenses has been accepted, the prospect of the U.S. merely researching the possibility has resulted in expressions of condemnation from allies and adversaries alike. The U.S. has been especially sensitive to this criticism; it has probably been a factor un inhibiting development of U.S. defenses.

The fact that the two superpowers have developed disparate strategic doctrines is in itself dangerous. They may be "playing the same game," but each is using a vitally different set of rules. This can result in confusion, doubt, and misinterpretation of actions and motives. It is highly unlikely that the Soviet Union will give up the defensive element of its strategic doctrine; it might be wise for the U.S. to add this element to its strategy in order to bring the

doctrines into line with each other. U.S. theories of mutual deterrence were never accepted by the Soviet Union; perhaps the U.S. might do well to change its position instead of expecting its primary adversary to "come around." A shift in U.S. strategy would not be an indication of weakness, but a restoration of the U.S. to a position of increased strength.

"The lengths to which a defender might be prepared to go depend on how much he values what is being defended....The capacity to meet defensive objectives can be expected to deter either through anticipation or the experience of resistance and retaliation which will force the opponent to recast his strategic goals."[474] What the U.S. must defend - both tangibles such as population and offensive forces, and intangibles that might be described as the American way of life - is seldom the subject of discussion, but of incredible value nonetheless. Arguments rage over cost-effectiveness and technological feasibility to the near exclusion of what defenses might defend. When what might be defended is considered, the issue revolves around whether to defend cities or offensive forces. Defenses defend much more than either of those.

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[474] Freedman, p. 20

"What is the object of defense?" Clausewitz asks. "Preservation," he insists.[475] Perhaps the U.S. should consider preserving itself.

[475] Clausewitz, p. 357.

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